




A Vision 2030 Flagship Project



National Drought Management Authority Tana River County Drought Early Warning Bulletin for February 2020

| FEBRUARY EW PHASE | Early Warning Phase Classification | | | |
|---|-------------------------------------|---------------------------------------|-------------------------------|------------------------------|
|  | LIVELIHOOD ZONE | EW PHASE | TRENDS | |
| <p>Drought Situation & EW Phase Classification Drought Phase: Normal-Stable</p> <p>Biophysical Indicators</p> <ul style="list-style-type: none"> Most Biophysical indicators show positive fluctuations towards the expected seasonal ranges. Light showers of rainfall were received in the month of February 2020. The January Vegetation Condition Index values for Tana River County are above normal and clearly indicating very good vegetation conditions across all sub-counties. The Water levels in water pans have improved to above normal at 4(65%-75%) in all livelihood zones. Water levels within pastoral livelihood zones are still below normal and most areas are still experiencing water stress. <p>Socio Economic Indicators (Impact Indicators)</p> <p>Production indicators:</p> <ul style="list-style-type: none"> The forage condition is good in both quality and quantity but the hatched locusts will reduce the quantity and quality.. Livestock body condition has improved across all livelihood zones. Milk production is above normal given the improved forage and pasture 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. Distances to water sources for households currently are above normal ranges. <p>Utilization indicators:</p> <ul style="list-style-type: none"> The number of under-fives at risk of malnutrition stood at 12.30%, which is above normal at this time of the year. Copping strategy index for households is within normal ranges but on an improving trend. | PASTORAL | NORMAL | STABLE | |
| | MARGINAL MIXED | NORMAL | STABLE | |
| | MIXED FARMING | NORMAL | STABLE | |
| | COUNTY | NORMAL | STABLE | |
| | Biophysical Indicators | Value for the month Tana River | LTA-Monthly Tana River | Normal ranges Kenya % |
| | Average rainfall MM (%) | 19.00 mm | 11 mm | 80-120 |
| | VCI-3month | 89.64 | | 35-50 |
| | % Of water in the water pan | 5(75-100%) | | 5-6 |
| | Production indicators | Value | Normal ranges | |
| | Livestock Migration Pattern | normal | Normal | |
| | Livestock Body Condition | 4-5 | 4-5 | |
| | Milk Production (Ltr /HH/Month) | 3.6 | 3.23 | |
| | Livestock deaths (for drought) | No death | No death | |
| | Access Indicators | Value | Normal ranges | |
| | Terms of Trade (ToT) | 78 | >=43 | |
| Milk Consumption (Ltr) | 1.9 | >=2.19 | | |
| Water for Households-trekking distance (km) | 7.4 | <=5.0 | | |
| Distances to grazing for livestock (km) | 8.0 | <=15.0 | | |
| Seasons production (90 kg bags)(by February 2019) | 10,560(maize) 3,780(green grams) | LTA (28,992Ha) LTA (4,400(Ha) | | |
| Utilization indicators | Value | Normal ranges | | |
| At Risk (%) | 12.30% | <9.58% | | |
| CSI | 14.09% | <=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:)

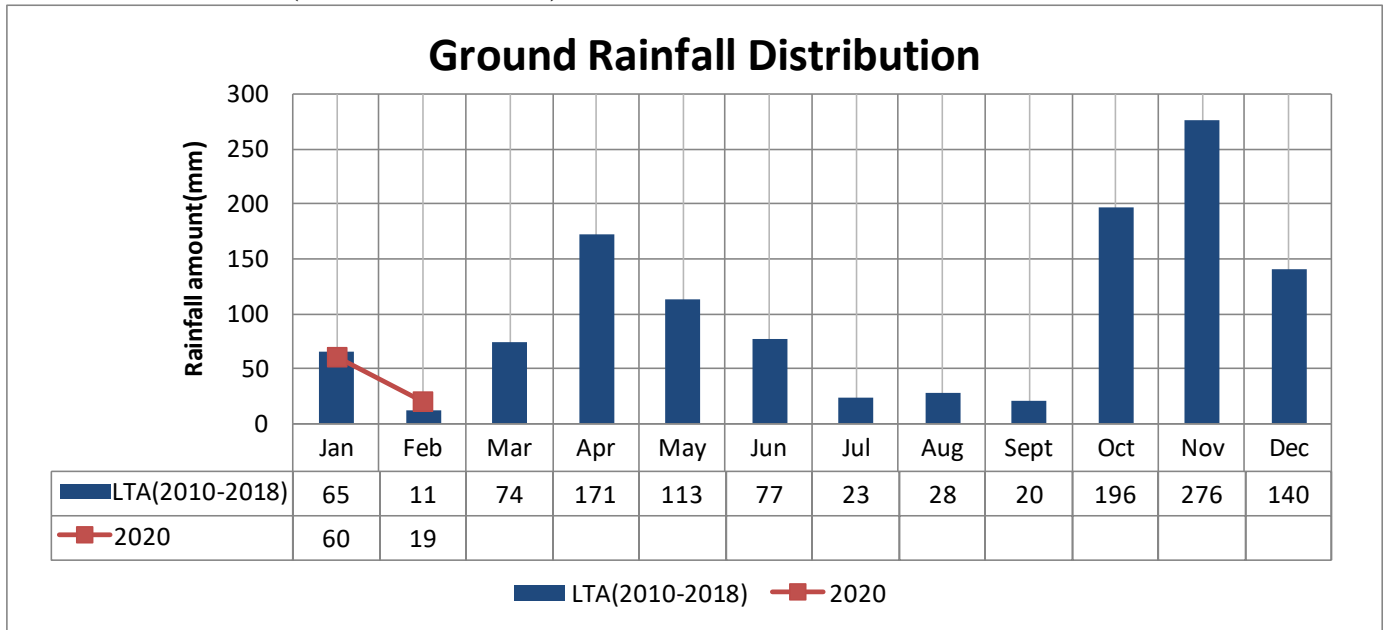
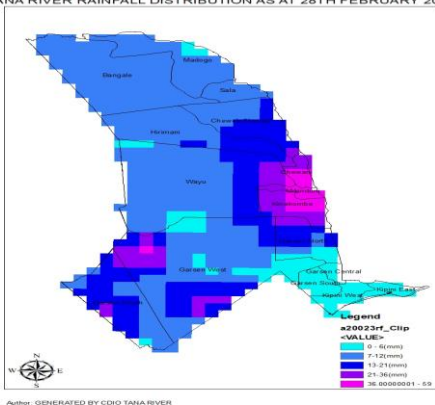


Fig .1.source: ARV

An average of 19.0 mm rainfall was recorded in February coupled with increasing temperatures. This is below the LTA of 11 mm.

1.2.RAINFALL TEMPORAL AND SPATIAL DISTRIBUTION

TANA RIVER RAINFALL DISTRIBUTION AS AT 28TH FEBRUARY 2020

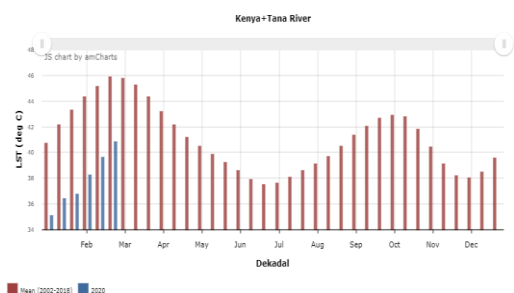


In the month of February, on average 12.0 mm of rainfall was received in Tana North, 20.00 mm received in Galole and 25 mm received in the Delta respectively. The amounts received were below normal at this time of the year. Spatial and temporal distribution was poor.

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

Fig.2.source: Continental Africa Dekadal RFE.

1.3. TEMPERATURES



1.3.1. LAND SURFACE TEMPERATURE (LST)
 The February 2019 land surface temperature (LST) values for Tana River County have decreased to 41°C by the 3rd dekad of February, which is below normal(46⁰C) at this time of the year.

Fig.3.source: LST-C6

2.1. IMPACTS ON VEGETATION AND WATER

2.1.1. VEGETATION CONDITION INDEX (VCI)

The February vegetation cover for Tana River County shows improved vegetation cover on average for the county across all the three sub-counties. The current trend has improved compared to the month of January 2020.

| COUNTY | Sub County | VCI as at 30 th January 2020 | VCI as at 23 rd February 2020 | |
|------------|------------|---|--|---|
| TANA RIVER | County | 89.64 | 97.39 | Improving trends in vegetation conditions experienced in all the sub-counties. Normal vegetation cover experienced in all livelihoods |
| | Bura | 73.39 | 80.47 | |
| | Galole | 95 | 111.19 | |
| | Garsen | 100.1 | 103.13 | |

Fig.4. Source BOKU

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

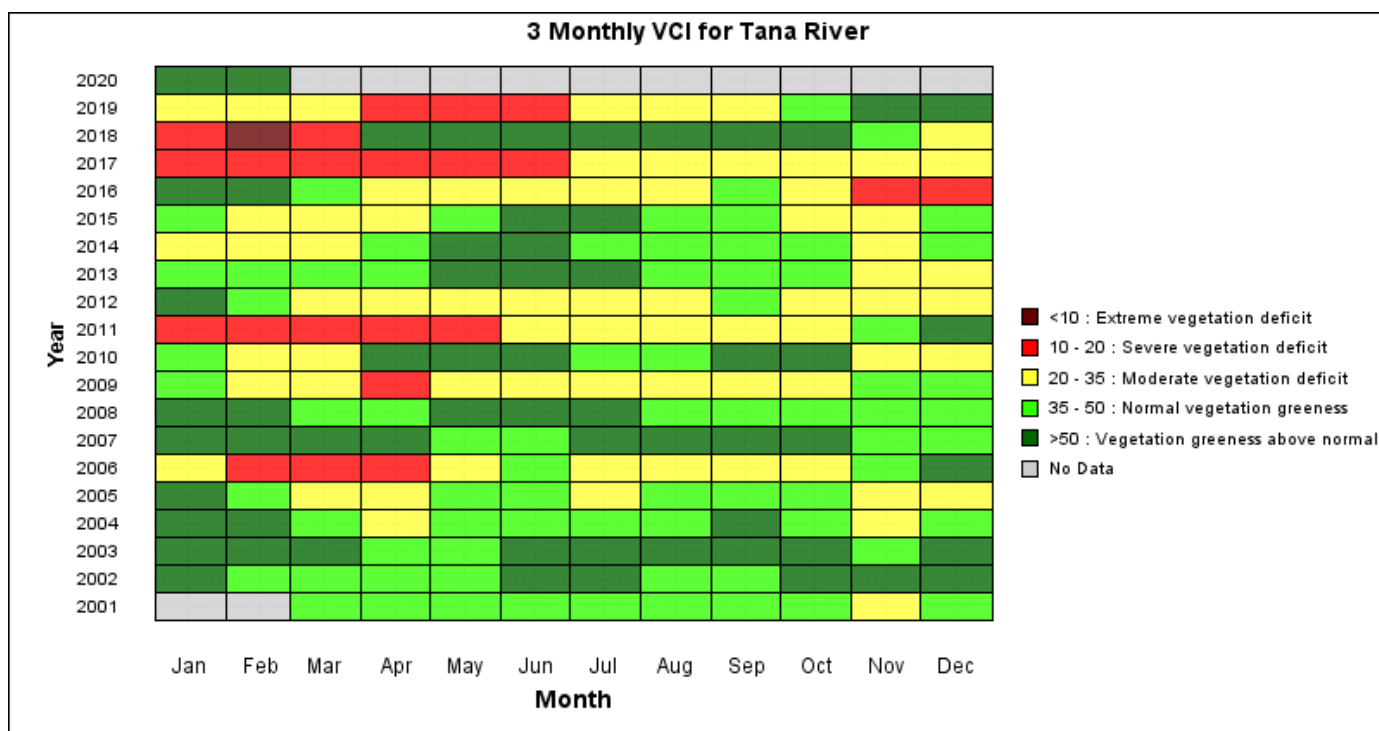
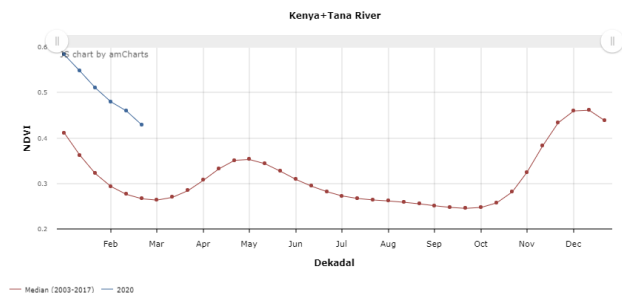


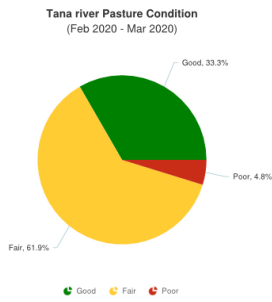
Fig.5.Source BOKU

In February the vegetation cover for Tana River County was at 97.39, which indicates very good vegetation condition. In comparison to the previous month the current vegetation cover has improved in quantity and quality.



The NDVI for Tana River County is currently showing a decreasing trend in February 2020(0.43) which is above the LTA (0.27). This is attributed to high temperatures currently being experienced.

Fig.5.Source: NDVI-C6

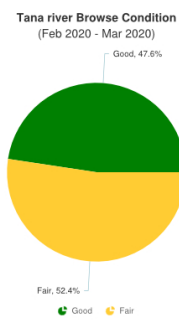


2.1.2 Pasture

The pasture condition is good to fair in quantity and quality across all livelihood zones in the county. Pasture condition across all livelihood zones have reduced due to high temperatures.

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

Figure 6: Tana River pasture conditions



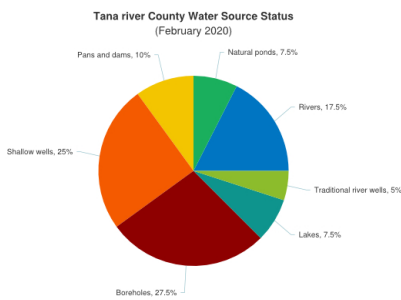
2.1.3. Browse

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

The available browse is expected to last for 2 months in all livelihood Zones and one month in mixed farming livelihood zone.

Figure 7: Tana River browse

2.2 WATER RESOURCE



2.2.1 Sources

The main water sources for both livestock and human consumption across all livelihoods were Bore holes(28%), Shallow wells(25%), Pans and Dams(10%), Natural Ponds(8%), Lakes(8%) and river wells(5%). Most water pans and dams were at 60-80% of their full capacity. Most households are currently using rivers, Pans and dams and bore holes. The current water sources are expected to last for more than two month across all livelihood zones.

Figure 8: Tana River water sources

2.2.2 Household access and Utilization

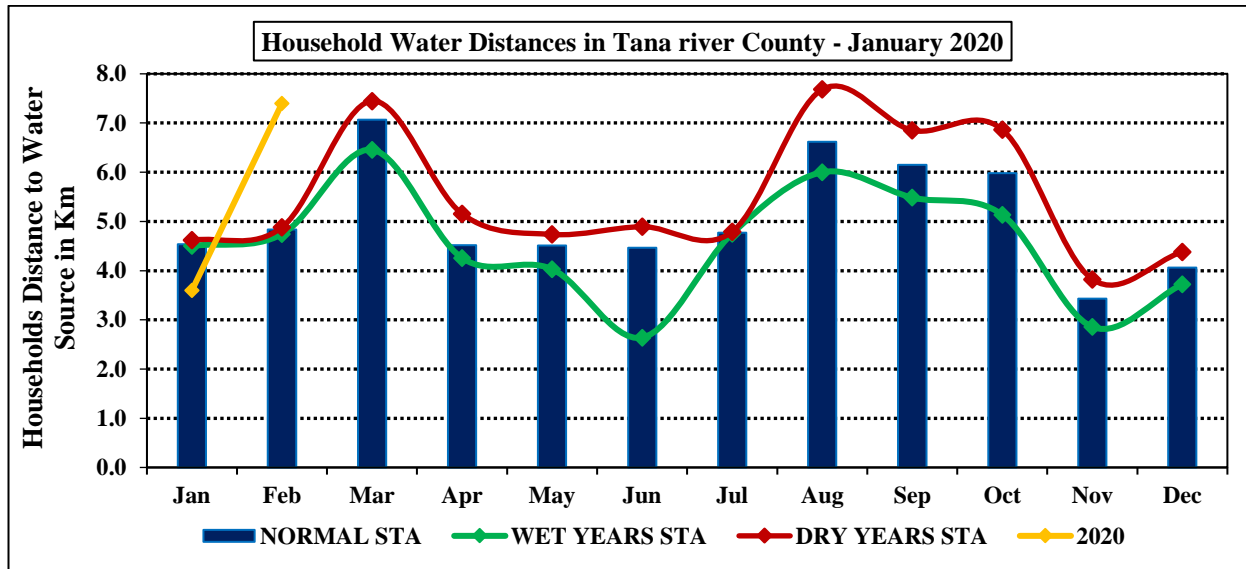


Fig.9.

- The households trekking distance increased in the month from 3.6 km to 7.4 km. The current distance is above the Long-term average of 4.84 km. This is attributed to reduced recharge levels in open water source month and high temperature currently being experienced across the county.

2.2.3 Livestock access

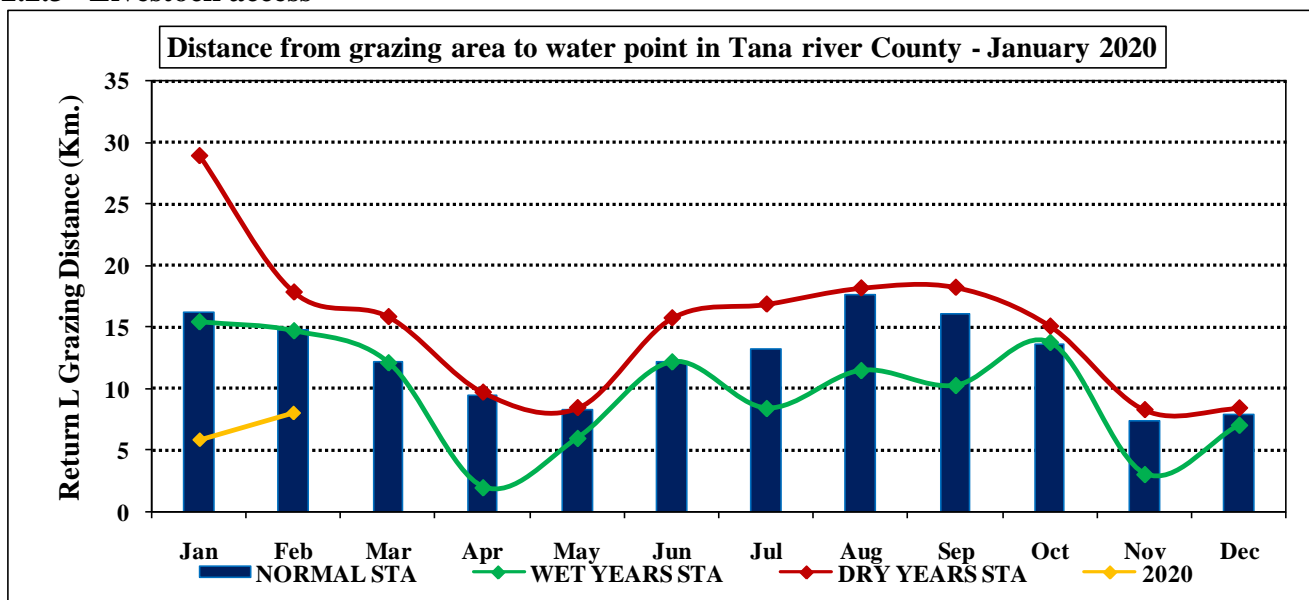


Fig.10.

- The return distance for livestock to grazing zones increased to 8 km during the month.
- The situation is attributed to drying up of some open water sources within the grazing fields and livestock are forced to access main water sources located within the same livelihood.

3.0. PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

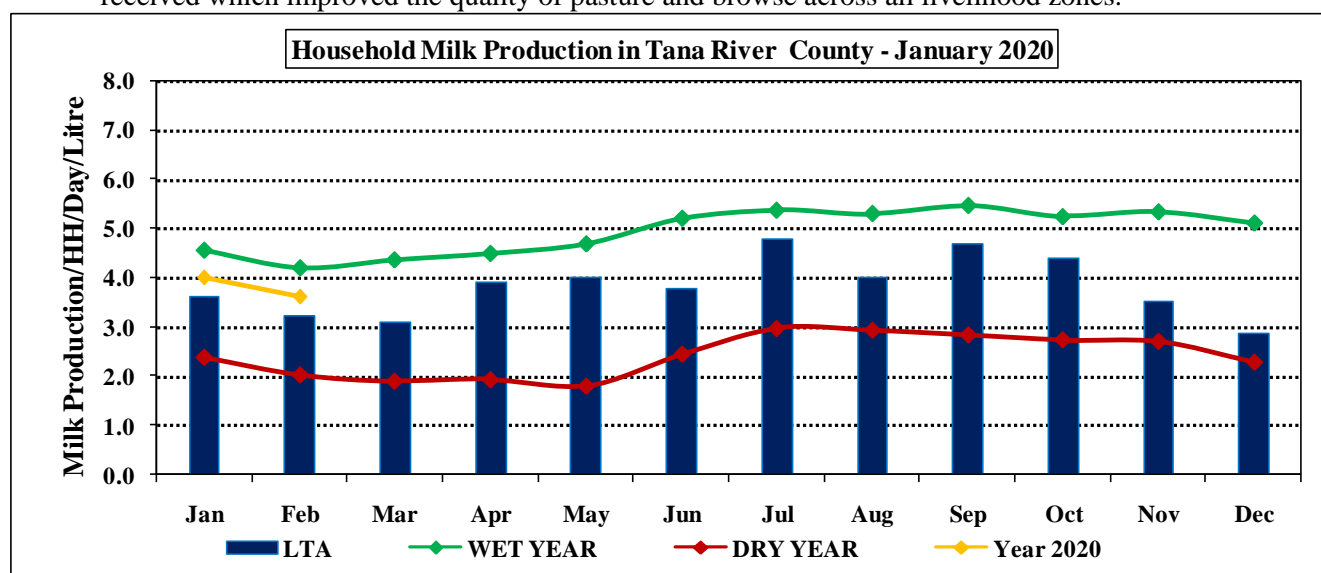
- The livestock body condition is good across all livelihood zones. The situation was as result of good pasture, browse and availability of water which has led to livestock still walking within normal ranges. *(Refer to table 4 in annex)*

3.1.2 Livestock Diseases

- LSD, CCPP in Garsen north and Wayu Ward.
- Trypanosomiasis, foot rot, helminthiasis, ORF, diarrhoea syndrome in Tana Delta, Garsen Central, Garsen South, Kipini East and West.
- Heavy infestations of worms across all livelihood zones triggered by rains
- Threat of Rift valley fever outbreak due to heavy rains and floods.
- 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 3.6 litres compared to the previous month. This is attributed to the fact that pasture and browse is still available and the body condition is good.
- In comparison to the long-term average; the current amount is above; this is attributed to heavy showers received which improved the quality of pasture and browse across all livelihood zones.



3.2. RAIN-FED CROP PRODUCTION.

Figure 11

3.2.1 Stage and Condition of food Crops

- Farmers have harvested their crops more so within the mixed and marginal mixed livelihood zone, the harvest were reported to be below average because of the destruction cause by floods. Most farmers now rely on vegetables, green grams and cowpeas as alternative crops. Land preparations in readiness to the long rains season is ongoing but most farmers lack farm inputs and are counting losses from the previous season due to floods.

4. MARKET PERFORMANCE
4.1. LIVESTOCK MARKETING
4.1.1 Cattle Prices

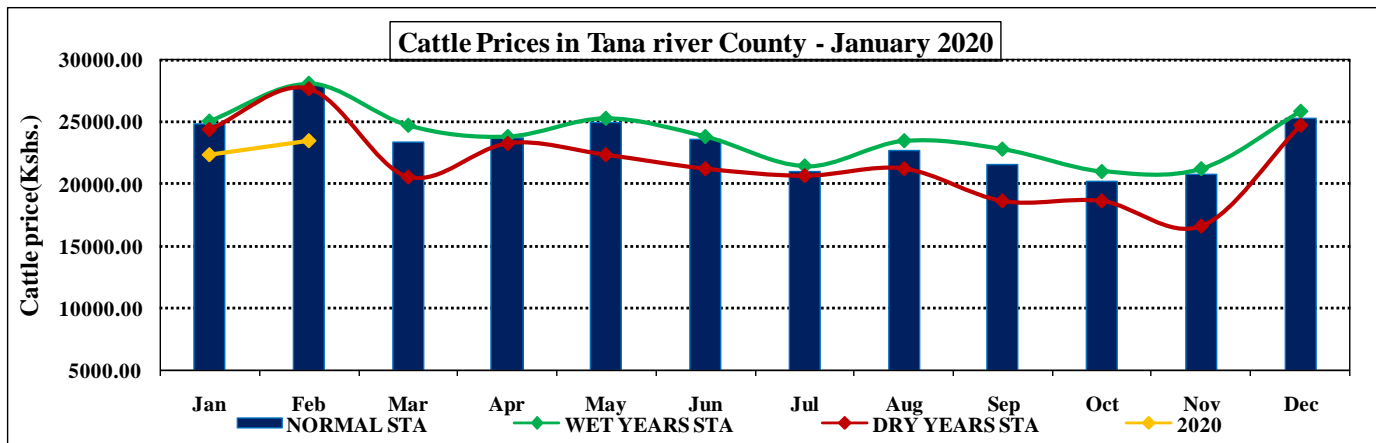


Fig.12.

- The average price for the medium sized cattle increased by 5% to Ksh.23, 444 in the reporting month as compared to Ksh.22,400 of the previous month.

4.1.2 Goat Prices

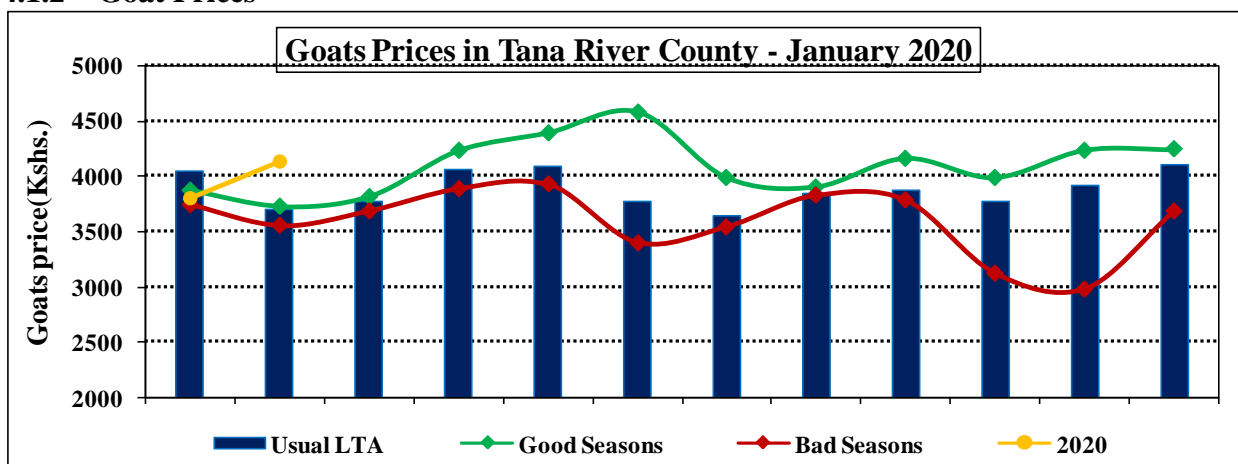


Fig.13.

- The average price of a goat increased to Ksh.4, 138 as compared to previous month attributed to market dynamics.
- The average Goat prices were lowest in Mixed and Marginal Mixed livelihood zone at Ksh. 4,000.
- The prices were below the long-term average by 6%.

4.2. CROP PRICES

4.2.1 Maize

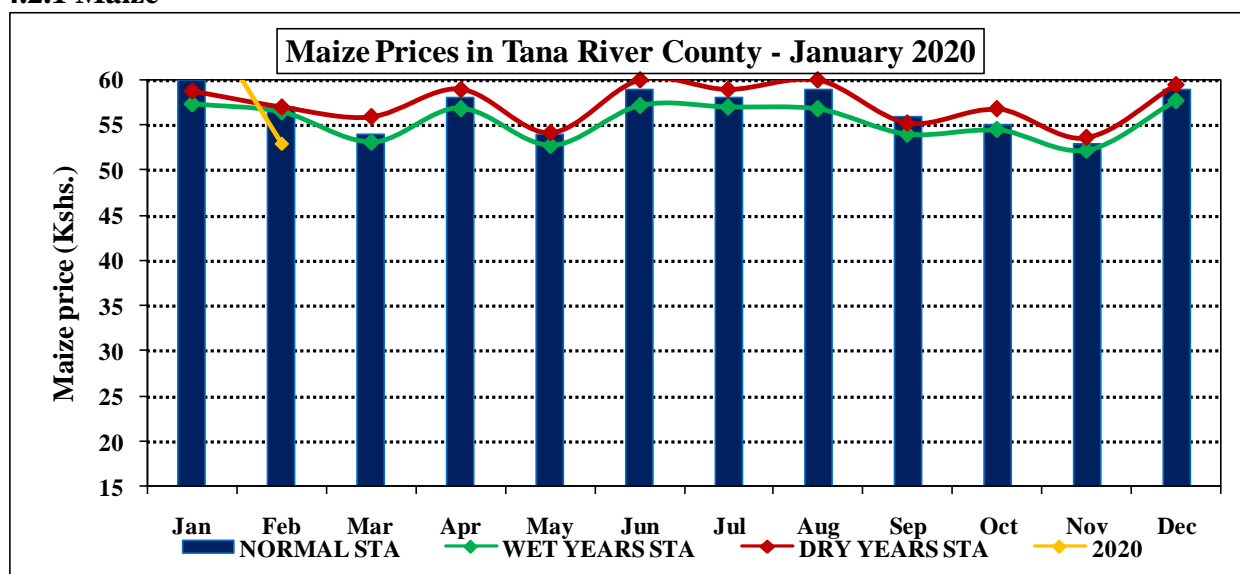


Fig.14.

- The average price for kilogram maize was Ksh.53 during the month, which was a decrease compared to the previous month. The price was below the long-term average at this time of the year by 7%.

4.3. Livestock Price Ratio/Terms of Trade

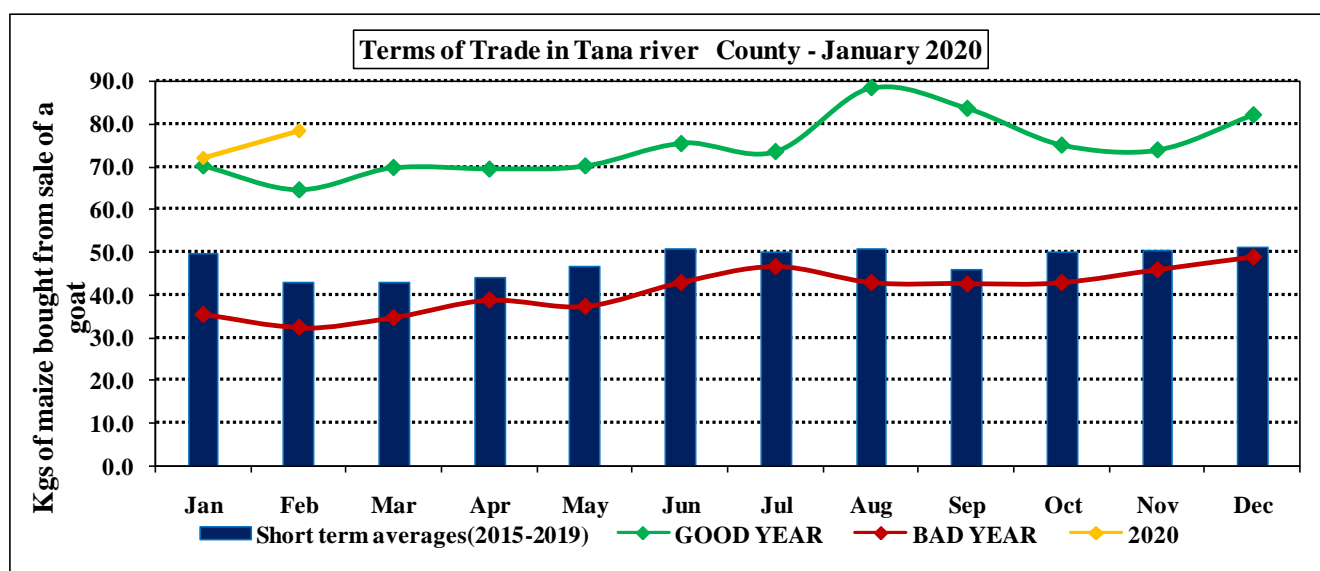


Fig .15.

- The terms of trade increased from 72 in January to 78 during the month of February 2020.
- The current term of trade is above the long-term average. This is attributed to market dynamics and the fact livestock still have a good body condition.

5.1. FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1. Milk Consumption

- The average milk consumption per household per day 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. Reduction in milk consumption is attributed to low milk production at households level.

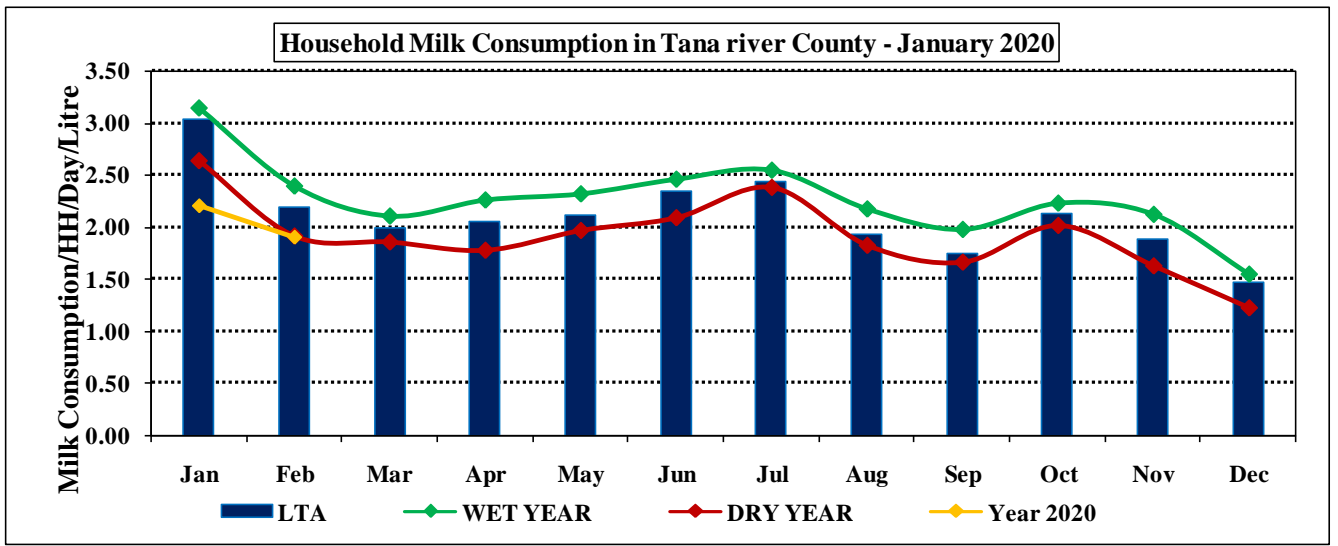


Fig. 16.

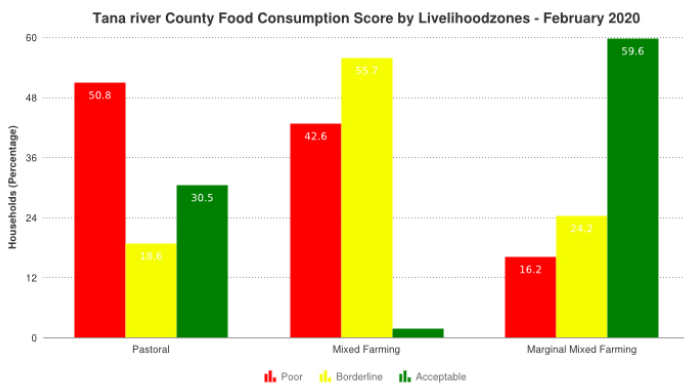


Figure 17:Tana River food consumption

5.1.2. Food Consumption Score

There was higher proportion of households with poor food consumption gaps in Pastoral (50.8%) and mixed farming livelihood zones (42.6%).

The proportion of households with borderline food consumption score was high in mixed farming livelihood zones at 16.7% and lowest in marginal mixed farming livelihood zones at 11.1%.

A proportion of 88.9%, 63.3% and 50% of the households across marginal mixed, mixed and pastoral livelihood zones have acceptable food consumption score respectively.

5.1.3 Health and Nutrition Status

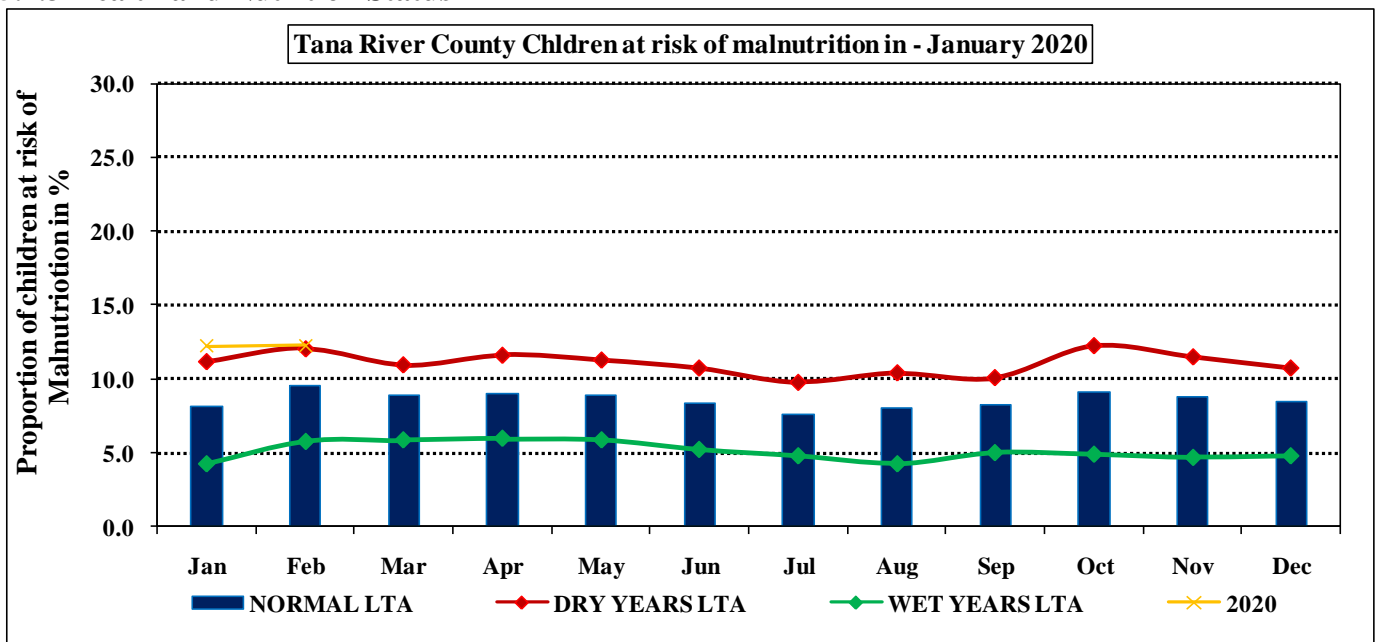


Fig.18.

- The proportion of sampled children under five years of age at risk of malnutrition remained stable at 12.30% as compared to the previous month at 12.25%. This is attributed to milk availability at household level more so within Pastoral and Marginal Mixed livelihood Zones.

5.2. Health

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

5.3. COPING STRATEGIES

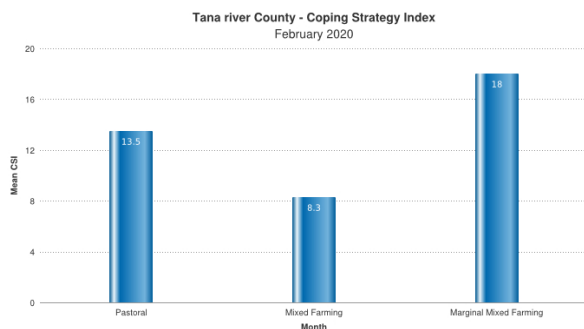


Fig.19: Tana River Coping Strategy Index

Coping Strategy Index

The average coping strategy index decreased to 14.09 in February 2020 compared to last month.

Households in Marginal mixed livelihood zone employed most coping strategies at 18.0 followed by Pastoral at 13.5. The mixed farming livelihood zones employed least coping mechanisms at 8.3.

6. CURRENT INTERVENTION MEASURES.

6.1 Non-food interventions

- Locusts rapid assessment by CSG.
- Rehabilitation of dams by Ministry of Water and WFP.
- Distribution of mosquito nets by Public health to flood affected victims.
- 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, Safaricom, Tana Salt, Msurujani, Timboni, Vumilia and Orolle) by Samaritan Purse/NDMA.
- Pests and crop diseases management by department of Agriculture.
- Cash transfer to 2477 households in Tana North (Sala, Bangale, Hirimani,) by OXFARM/ALDEF/PGI.
- Cash transfer to 1000 floods affected victims in Tana Delta by KRCS.
- Review of contingency plans by KRCS.
- Integrated outreaches in hard to reach areas supported by Concern World Wide.
- Distribution of NFIS to flood affected victims in Delta by Ministry of Water/World Vission.

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/WFP/ADS/SPECIAL PROGRAMS.
- Public primary schools are under regular School Meals Program supported by WFP.

7.0 .EMERGING ISSUES

7.0.1. Insecurity/Conflict/Human Displacement

- Hatching of locusts in Tana North (Boka, Buradhima, Buwa, Nanighi, Sala, Bangale, Mbalambala) the impacts were minimal.
- Human wild life conflicts reported in Kipini, Chara and Kilelengwani.
- Over 4500 households had been affected by floods in Tana Delta, Tana River and Tana North and over 4,319 hectares under crops destroyed by floods. but the displaced has since gone back to their homes.
- There were no intercommunity conflicts reported during the month

7.0.2. Migration - limited to migrations of persons.

- Typical livestock migrations back into the traditional grazing areas occurred earlier in the season following the early onset of the short rains. Given the good availability of pastures, browse and water resources, livestock are expected to remain within the wet season grazing areas through the March to May long rains season.

7.0.3. Food Security Prognosis

- According to the Greater Horn of Africa (GHACOF) forecast, the March to May long rains are expected to be average to above average due to an increased probability for Neutral ENSO and Indian Ocean Dipole (IOD) phases from March.
- The risk of flooding along the Tana River basin in the Marginal Mixed Farming Livelihood Zone and the Mixed Farming Livelihood zone is likely to remain elevated between April and May following an average to above average long rains forecast.
- The food crops replanted following the 2019 October to December short rains flooding are unlikely to reach maturity given the anticipation of flooding from April through to May. Similarly, crop production during the March to May long rains season is likely to be below average as the anticipated floods are likely to result in significant crop damage.
- The prices of staple foods are anticipated to remain above average, between February and June, following below the average 2019 October to December short rains production and cumulative deficits from two previously below average harvests.

7.0.4. Phase Classification

Pastoral and Mixed livelihood zones are classified under stressed Phase (IPC Phase 2) while, Marginal mixed Zone is classified under Crisis Phase (IPC Phase 3). The County has improved to Stressed food insecurity phase.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- a) Review of contingency plans by sectors and partners
- b) Enhance security surveillance and peace Barazas in hot spot areas.
- c) Enhance integrated outreaches in hard to reach areas across all the sub-counties more so in flood affected areas.
- d) Upscaling of food aid to the population in need in Tana North, Tana River and Tana Delta sub-counties.
- e) Provision of storage facilities to farmers.
- f) Desilting of open water sources.
- g) Capacity building of WRUWAS

8.2.0 Proposed Recommendations

| PROPOSED INTERVENTIONS | | |
|------------------------|--|--------------------------------|
| SECTOR | INTERVENTIONS | HOTSPOTS/BENEFICIARIES |
| 8.2.1. Water | 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 areas | Tana North,Galole,Tana River |
| | Support integrated outreaches in hard to reach areas | Tana North,Galole,Tana River |
| | Enhance sensitization on issues of hygiene across all the livelihood zones. | Tana North,Galole,Tana River |
| | Provide water harvesting and storage facilities to medical facilities. | 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 to displaced households | Tana North,Galole,Tana River |
| 8.2.3.Education | 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 | Tana North,Galole,Tana River |

| | | |
|--------------------------|---|------------------------------|
| | livelihood zones. | |
| | 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 |
| | Rangeland reseeding fodder establishments and conservations | 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 restocking in Pastoral and Marginal mixed livelihood zones. | Tana North,Galole,Tana River |
| | Support provision of pasture seeds to farmers and upscaling of existing pasture establishments. | Tana North,Galole,Tana River |
| | Restocking of small stocks | Tana North,Galole,Tana River |
| | Provision of storage facilities to farmers with hay | Tana North,Galole,Tana River |
| | Existing Livestock markets rehabilitations | Tana North,Galole,Tana River |
| 8.2.5.Agriculture | Capacity building of farmers on agronomic husbandry practises on different crops | Galole,Tana Delta |
| | Support Climate Smart Agriculture Interventions. | Galole,Tana Delta |

| | | |
|---------------------------------|--|---------------------------------|
| | Carryout Soil sampling and testing | Galole,Tana Delta |
| | Soil and water conservation especially on denuded farm lands | Tana North,TanaRiver,Tana Delta |
| | Provision of drought tolerance seeds to farmers under irrigation and farmers in preparation to long rains. | Tana North,TanaRiver,Tana Delta |
| 8.2.6.Peace and Security | Carry out inter-boundary peace meetings in areas with cross border tensions | Tana North,TanaRiver,Tana Delta |
| | Carry out inter-community peace meetings in areas with inter-community resource based conflict. | Tana North,TanaRiver,Tana Delta |
| | Provision of shelter materials to the affected flood victims | Tana North,Tana River,Galole |

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.