



A Vision 2030 Flagship Project



National Drought Management Authority Tana River County Drought Early Warning Bulletin for MAY 2022

MAY EW PHASE	Early Warning Phase Classification																		
	LIVELIHOOD ZONE	EW PHASE	TRENDS																
<p>Drought Situation & EW Phase Classification Drought Phase: ALERT-WORSENNING</p> <p>Biophysical Indicators</p> <ul style="list-style-type: none"> Biophysical indicators are showing negative trends away from expected seasonal ranges. Light showers of rainfall were received in the month of May 2022. The May Vegetation Condition Index values for Tana North-Bura and Galole sub-county are below normal but on declining trend for the county by 28th April 2022. The Water levels in most water pans were declining below normal at 4-5(45%-65%) across all livelihood zones. <p>Socio Economic Indicators (Impact Indicators)</p> <p>Production indicators:</p> <ul style="list-style-type: none"> The forage condition is poor in pastoral and marginal mixed but fair in mixed farming livelihoods in both quality and quantity Livestock body condition is normal in mixed and moderate in marginal mixed and pastoral livelihood zones. Milk production is below average in Pastoral and marginal mixed livelihood zones. This is attributed to depleting forage and pasture conditions. Livestock migrations towards the fall back grazing fields have been observed during the month. <p>Access indicators</p> <ul style="list-style-type: none"> Terms of trade on declining trend. Attributed to decreasing prices of goat and increasing cereal prices due to market dynamics. Distances to water sources for households currently on a increasing trend and below averages compared to normal. <p>Utilization indicators:</p> <ul style="list-style-type: none"> The number of under-fives at risk of malnutrition currently on the increase compared to previous month. Copping strategy index for households is on increasing trend due high food prices and lack of enough food at household level. 	<p>PASTORAL</p> <p>MARGINAL MIXED</p> <p>MIXED FARMING</p> <p>COUNTY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #444; color: white;"> <th>Biophysical Indicators</th> <th>Value for the month Tana River</th> <th>LTA-Monthly Tana River</th> <th>Normal ranges Kenya %</th> </tr> </thead> <tbody> <tr> <td>Average rainfall MM (%)</td> <td>7.96 mm</td> <td>113 mm</td> <td>80-120</td> </tr> <tr> <td>VCI-3month</td> <td style="background-color: yellow;">24.19</td> <td></td> <td>35-50</td> </tr> <tr> <td>% Of water in the water pan</td> <td>3-4(35-55%)</td> <td></td> <td>5-6</td> </tr> </tbody> </table>	Biophysical Indicators	Value for the month Tana River	LTA-Monthly Tana River	Normal ranges Kenya %	Average rainfall MM (%)	7.96 mm	113 mm	80-120	VCI-3month	24.19		35-50	% Of water in the water pan	3-4(35-55%)		5-6	<p>ALERT</p> <p>ALERT</p> <p>ALERT</p> <p>ALERT</p>	<p>WORSENNING</p> <p>WORSENNING</p> <p>WORSENNING</p> <p>WORSENNING</p>
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	% Of water in the water pan	3-4(35-55%)		5-6															
	Production indicators		Value	Normal ranges															
	Livestock Migration Pattern		Not-Normal	Normal															
	Livestock Body Condition		3-4	4-5															
	Milk Production (Ltr /HH/Month)		4.2	3.99															
	Livestock deaths (for drought)		No death	No death															
	Access Indicators		Value	Normal ranges															
	Terms of Trade (ToT)		69.1	>=70															
	Milk Consumption (Ltr)		1.5	>=2.2															
	Water for Households-trekking distance (km)		9.0	<=4.52															
	Distances to grazing for livestock (km)		12	<=8.36km															
Seasons production (90 kg bags)(by January 2022)		0.0(maize) 0.0(green grams)	LTA (51,804(bags)) LTA (12,384(bags))																
Utilization indicators		Value	Normal ranges																
At Risk (%)		22.40%	<13.22%																
CSI		13.98%	<=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:)

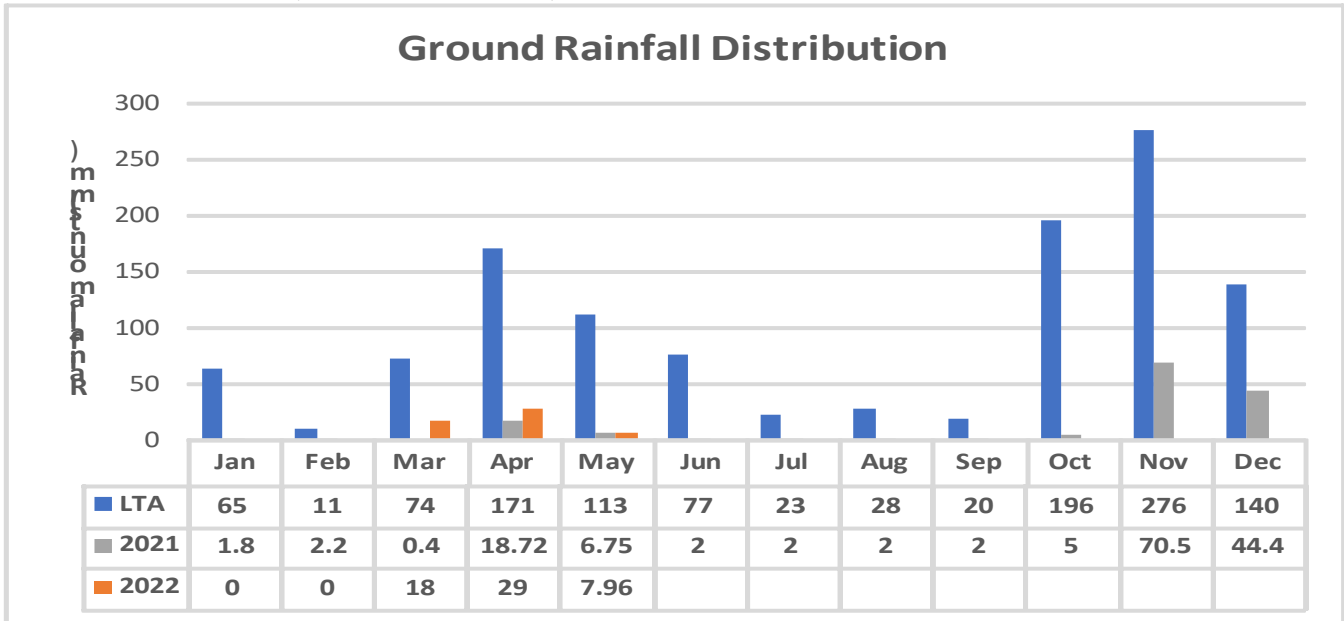
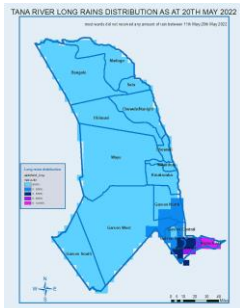


Figure 1.source: Africa Riskview

An average of 7.96 mm rainfall was recorded in May coupled with high temperatures. This is below the LTA of 113 mm. most wards did not receive substantial amounts of rainfall during the month.

1.2.RAINFALL TEMPORAL AND SPATIAL DISTRIBUTION



In the month of May, on average 1.82 mm of rainfall was received in Tana North(Bura), 3.53 mm received in Galole sub-county and 18.52 mm received in Tana Delta(Garsen) respectively. The amounts received were below normal at this time of the year. Spatial and temporal distribution was poor. The rainfalls were unevenly distributed across all the three sub-counties. Most wards had not received good amount of rainfall by 31st May 2022.

Fig.2.source: Continental Africa Dekadal RFE.

1.3. TEMPERATURES

1.3.1. LAND SURFACE TEMPERATURE (LST)

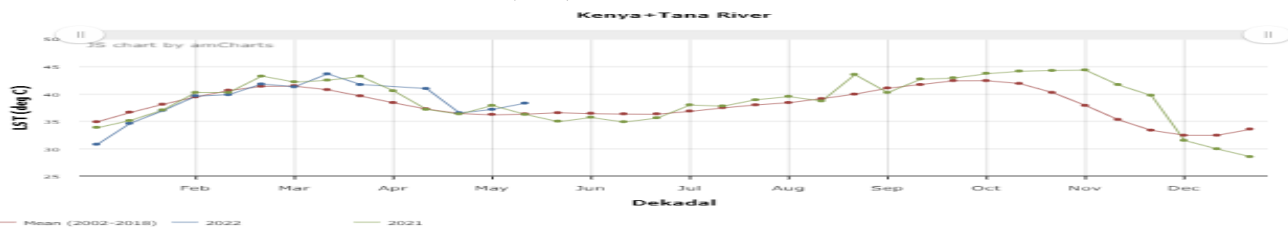


Fig.3.source: LST-C6

The May 2022 land surface temperature (LST) values for Tana River County decreased to 38.36⁰C by the 2nd dekad of May 2022, which is above normal (36.35⁰C) at this time of the year.

2.1. IMPACTS ON VEGETATION AND WATER

2.1.1. VEGETATION CONDITION INDEX (VCI)

The May vegetation cover for Tana River County shows moderate vegetation deficit conditions compared to the month of April. The declining trend was experienced across the three sub-counties attributed to poor performance of the long rains. All sub-counties are currently experiencing moderate vegetation deficit conditions.

Table 1. Vegetation Condition Index

COUNTY	Sub County	VCI as at 31 st May 2022	VCI as at 28 th April 2022	
TANA RIVER	County	24.19	34.8	Vegetation conditions experienced in the county is depleted and declining across all livelihood zone
	Bura	20.02	29.17	
	Galole	22.11	34.37	
	Garsen	29.03	39.85	

Table1. Source BOKU

The information provided above reflects Tana River County is in moderate drought phase across the three sub-counties, with the no showers received towards the end of May, the vegetation cover is depleted.

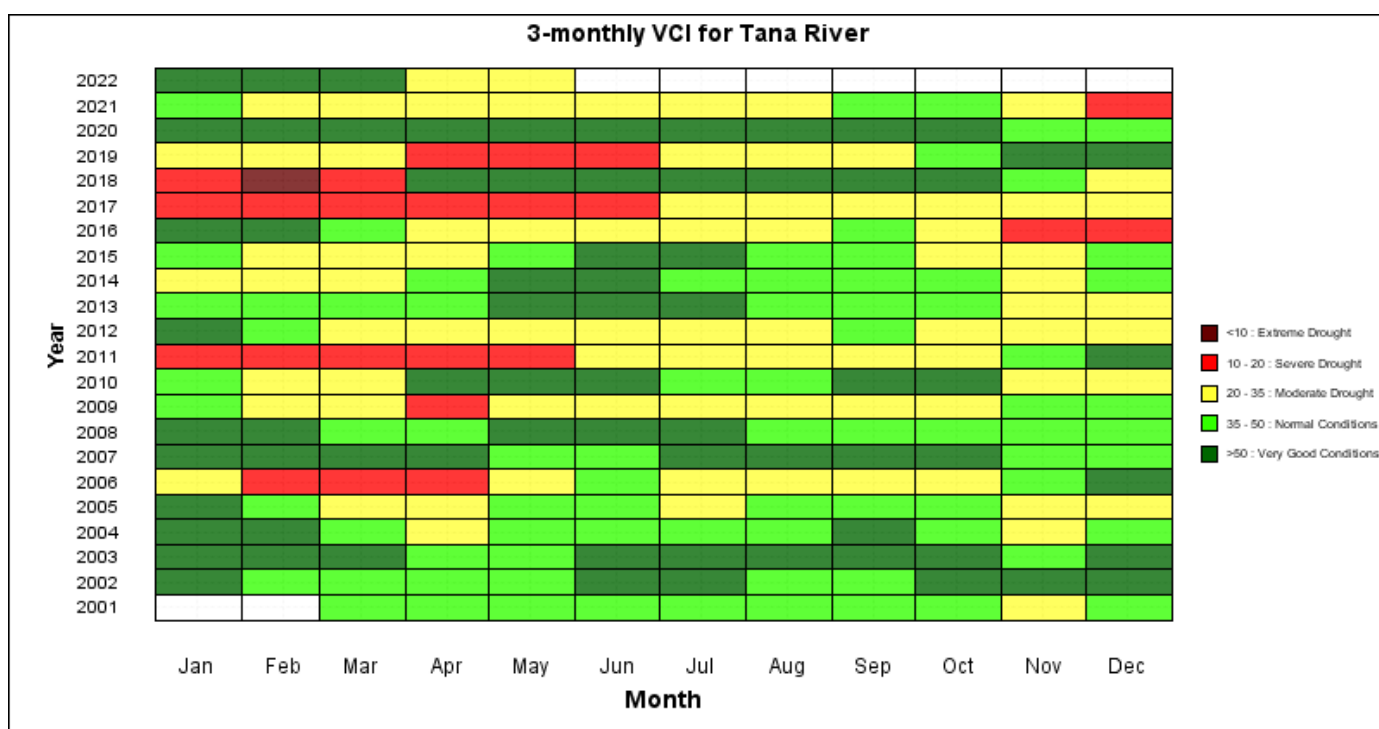


Fig.5. Source BOKU

In May 2022 the vegetation cover for Tana River County was at 34.8, which indicates moderate drought conditions. In comparison to the previous month the current vegetation cover has declined in quantity and quality.

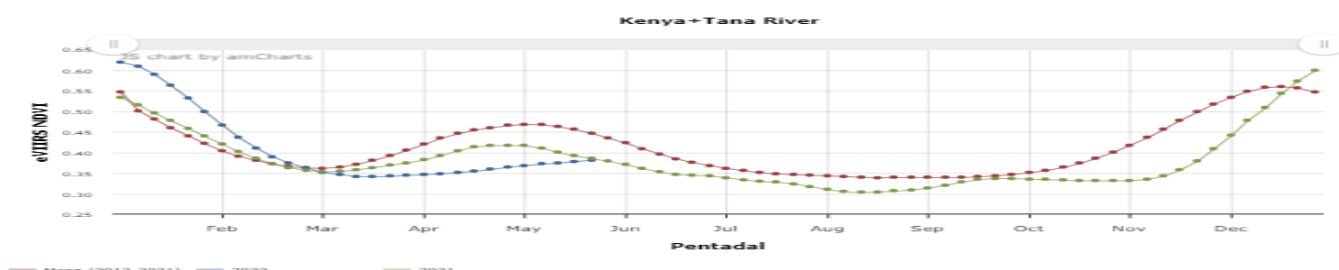
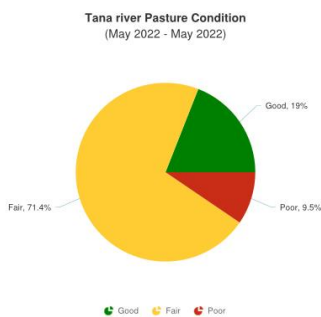


Fig.5. Source: NDVI-C6

The NDVI for Tana River County is currently showing slight increase in trend From early May 2022(0.37) to mid May 2022(0.38) which is below the LTA (0.39). This is attributed to high temperatures and evapotranspiration currently being experienced across all livelihood zones in the county.

2.1.2.Pasture



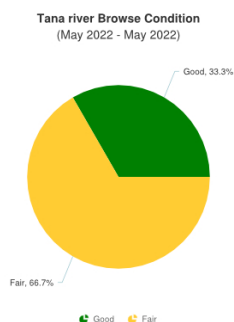
The pasture condition is fair to poor in quantity and quality in Pastoral livelihood zones, fair to good in Marginal and Mixed farming livelihood zones. This is attributed to lack of rain and high influx of livestock from North eastern which has led to over grazing.

The current pasture is expected to last for less than one month in Pastoral and marginal mixed and one months in the Mixed farming livelihood zones. Pockets that received light showers had improved pasture.

(Figure 2)

Figure 2.Tana River pasture

2.1.3.Browse



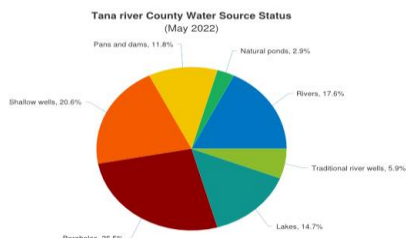
The browse condition is fair to poor in quantity and quality in Pastoral and marginal mixed livelihood zones, fair to good in mixed livelihood zones which is normal at this time of the year.

The available browse is expected to last for less than one month in all livelihood zone(Figure 3).

Figure 3.Tana River browse

2.2 WATER RESOURCE

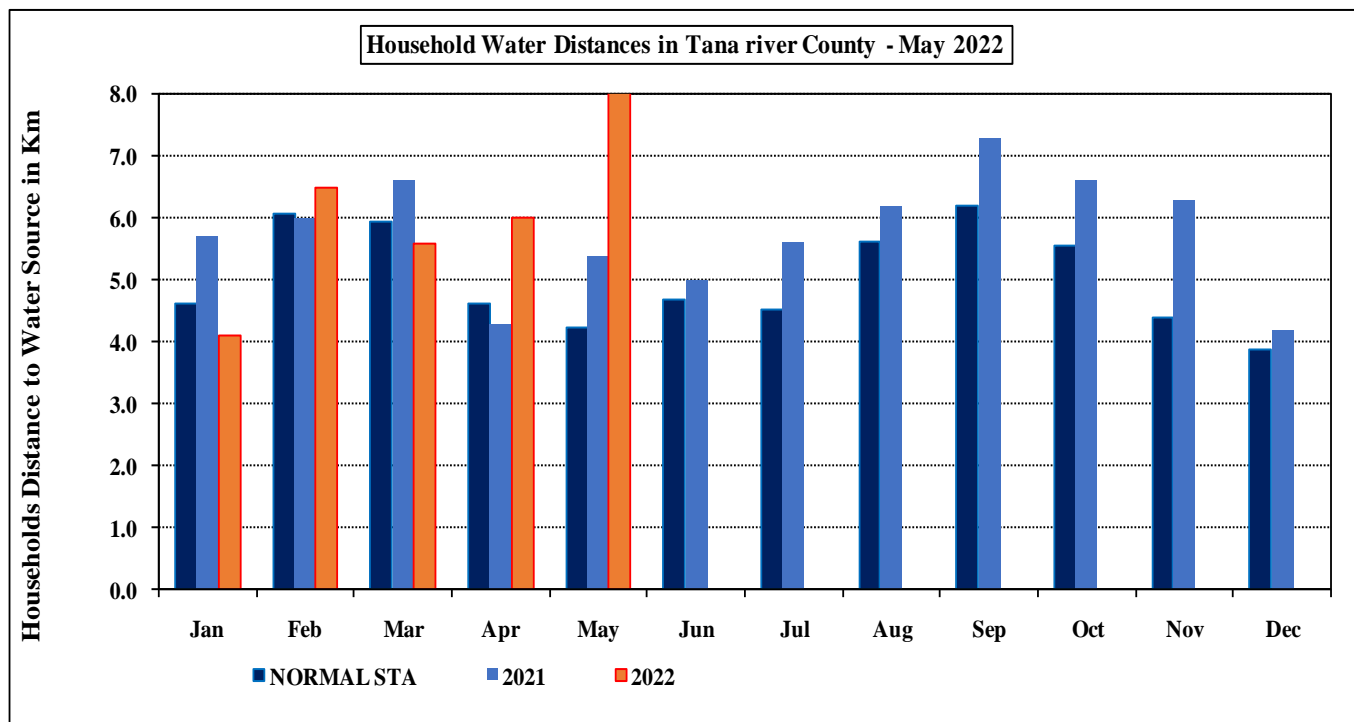
2.2.1 Sources



The main water sources for both livestock and human consumption across all livelihoods were boreholes(26.5%),Shallow wells(20.6%),Lakes and Rivers(14.7%), pans and dams(11.8%),Traditional wells(5.9%). Most open water sources within pastoral livelihood zones have dried up(Figure 4).

Figure 4.Tana River water sources

2.2.2 Household access and Utilization



The households trekking distance increased to 9.0 km. The current distance is below the Long-term average of 4.5 km. This is attributed to lack of enough rain in the county to recharge existing water sources, most of water sources within pastoral livelihood zones have dried up due to high temperatures during the month. Quality of water in some of them are not safe for drinking and therefore households prefer alternative sources. Households within pastoral livelihood zones are walking long distances in search of water at 4.4 km on average compare to households in mixed farming livelihood zones who cover 1.8 km on average.

2.2.3 Livestock access

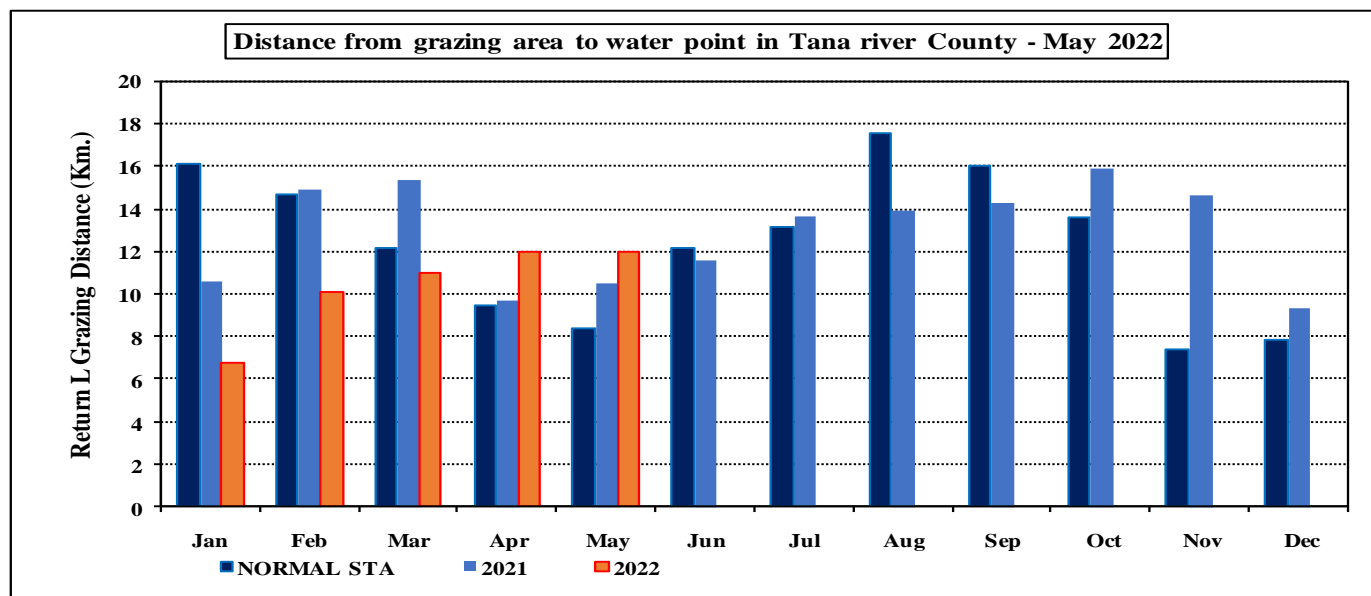


Figure 5. Households water distances

The return distance for livestock to grazing zones increased to 12 km during the month attributed to the reduction in water levels in most of open water sources and poor conditions of pasture and browse in Pastoral and Marginal mixed therefore livestock are walking long distances in search of good pasture and browse. Some of livestock herds are currently moving towards fall back grazing fields. The recharge levels in most open water water sources within pastoral livelihood zones are dry and most livestock have started migrating toward fall back grazing fields of Tana Delta. Livestock return distance are higher in Pastoral livelihood zones at 15.0 km compared to 2.1 km in mixed farming livelihood zones.

3.0. PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

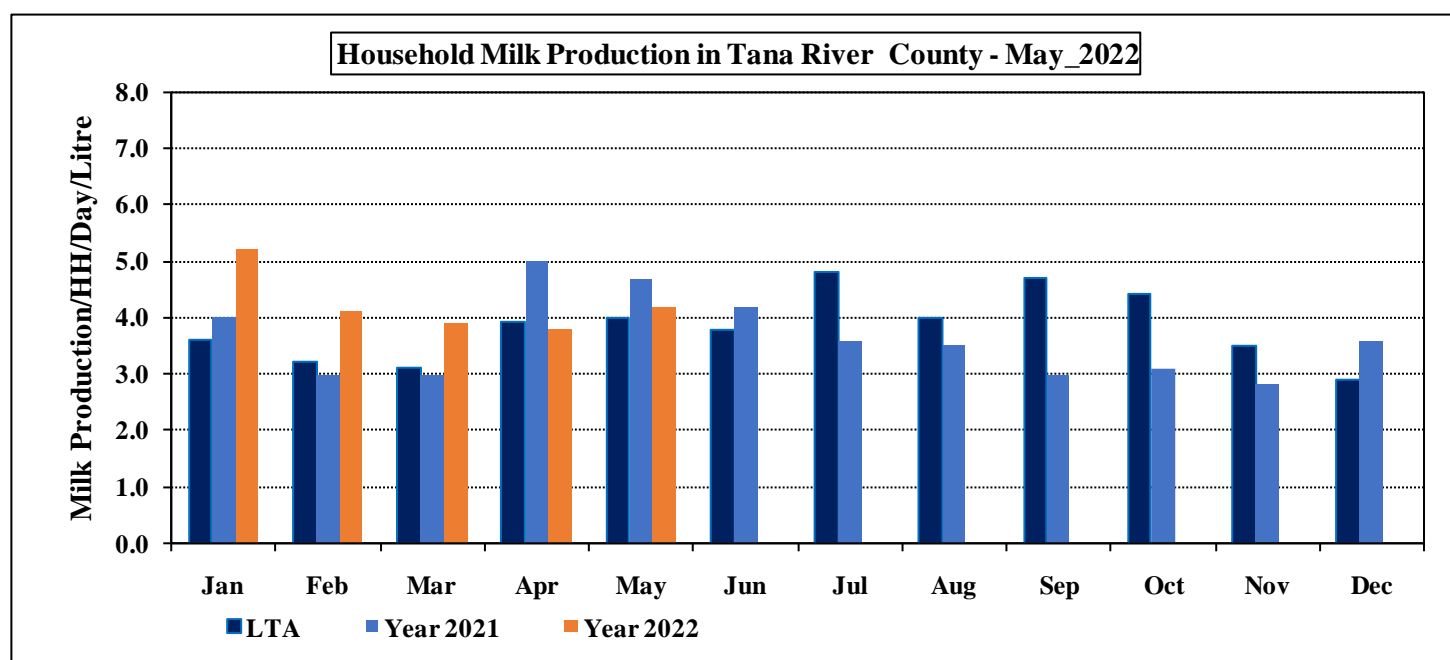
- The livestock body condition was moderate in Pastoral and Marginal mixed but normal in mixed farming livelihood zones. The situation was attributed to poor to fair quality of pasture and browse. With the current in-migrations of livestock from neighbouring counties of North eastern the current available pasture will be depleted in the coming weeks. *(Refer to table 4 in annex)*

3.1.2 Livestock Diseases

- Livestock diseases are on the increase,, contagious bovine pleuropneumonia (CBPP) and contagious caprine pleuropneumonia (CCPP) diseases were reported in pastoral, marginal mixed and mixed livelihood zones. Trypanosomiasis, foot rot, Rabies, Orf, diarrhoea syndrome was reported in all livelihood zones. Newcastle disease (NCD) was noted at marginal mixed and mixed livelihood zones. However, the disease incidences were within the normal seasonal ranges.

3.1.3 Milk Production

- The average milk produced per household increased to 4.2 litres compared to the previous month. This is attributed to improve quality of pasture and browse across mixed farming livelihood zones triggered by light showers received in the month of April.



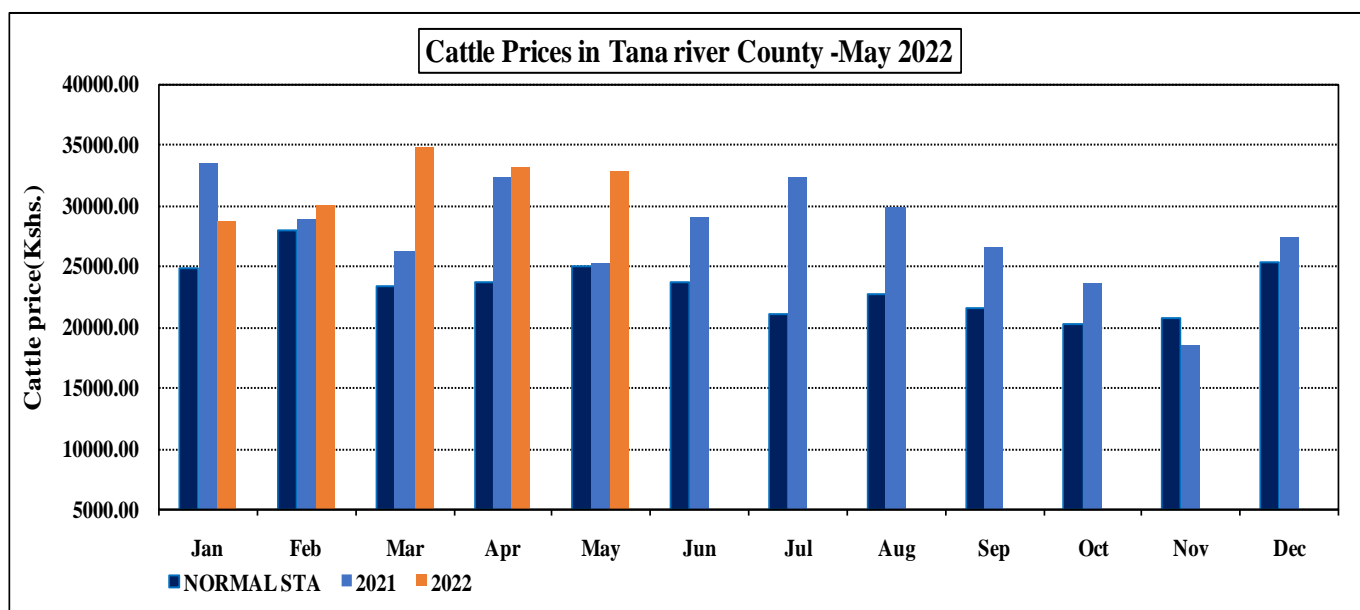
- In comparison to the long-term average of 4.0 litres; the current amount is above the long term average.

3.2. RAIN-FED CROP PRODUCTION.

3.2.1 Stage and Condition of food Crops

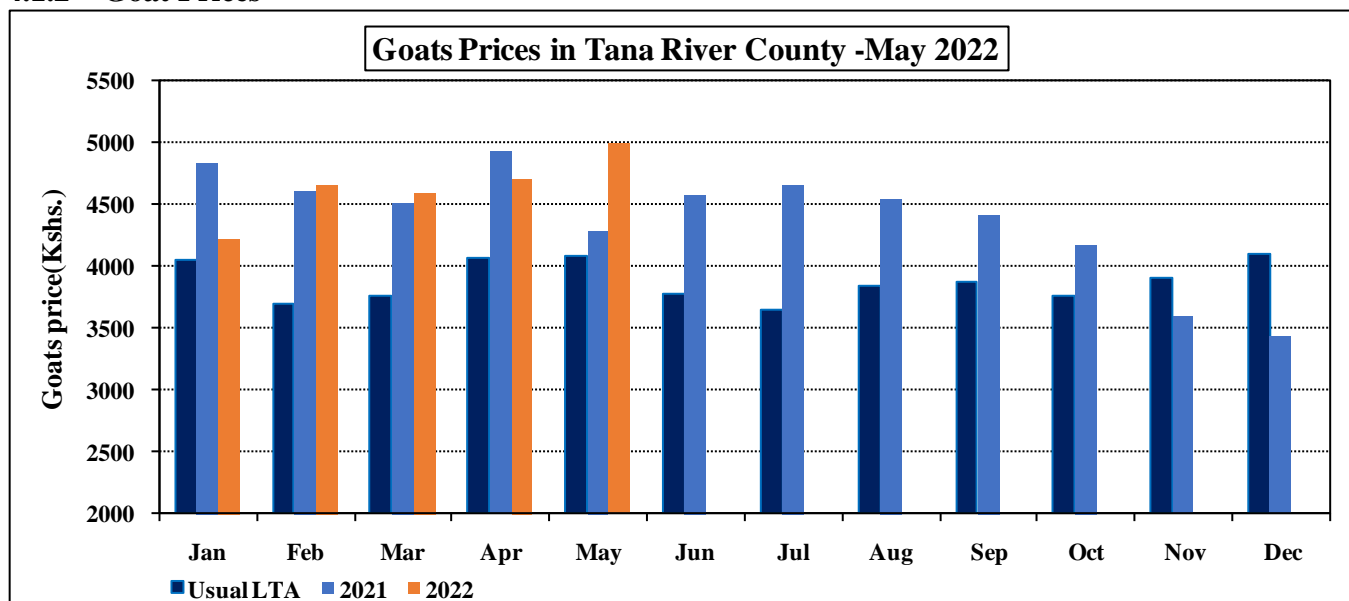
- Most planted crops in Mixed and marginal mixed livelihood zones are at knee level but are at high risk of moisture stress due to poor performance of the long rains.
- Within the major irrigation schemes (Bura and Tana Irrigation Schemes) maize crops are at knee high but land preparation and planting is also on-going, in Hola irrigation schemes rice maize are at knee high doing well.

4. MARKET PERFORMANCE
4.1. LIVESTOCK MARKETING
4.1.1 Cattle Prices



- The average price for the medium sized cattle decreased by 1% to Ksh.32, 779 in the reporting month as compared to Ksh.33, 055 of the previous month. This is attributed to the declining livestock body conditions in the current month and market dynamics. High cattle prices were reported in Pastoral livelihood zones at Ksh.37, 333 while least prices were recorded in mixed farming at Ksh.27, 667.

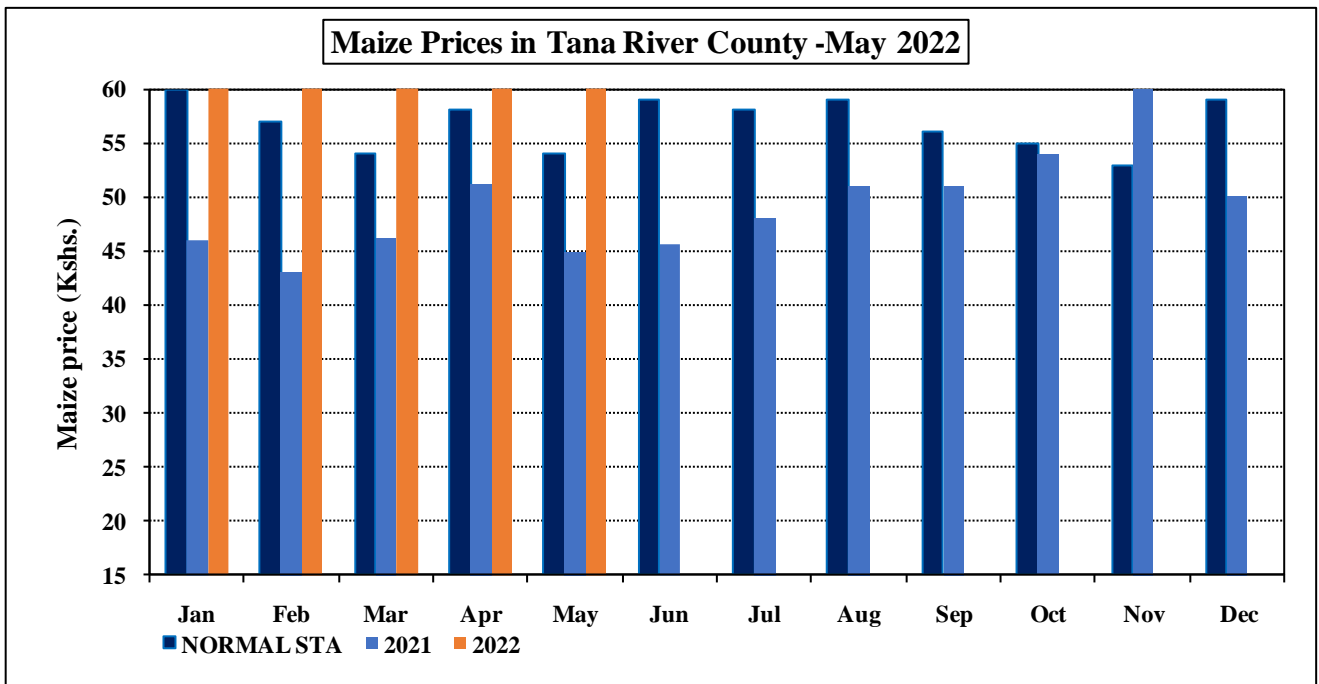
4.1.2 Goat Prices



- The average price of a goat increased by 6% to Ksh.5,000 as compared to previous month. This was attributed to moderate body conditions and market demand thereby pushing the prices upwards.
- The average Goat prices were highest in pastoral livelihood zones at Ksh. 5,200 and lowest in Marginal Mixed farming at Ksh.4,889.

4.2. CROP PRICES

4.2.1 Maize



- The average price for kilogram maize increased by 13% to Ksh.72 during the month compared to the previous month. This was attributed to scarcity of maize in the market due under production during the short rains harvests. The prices were above normal at this time of the year compared to the long-term average. The prices were higher in Pastoral livelihood zones at Ksh.87 per kilogram on average and low in mixed livelihood zones at Ksh.62.

4.3. Livestock Price Ratio/Terms of Trade

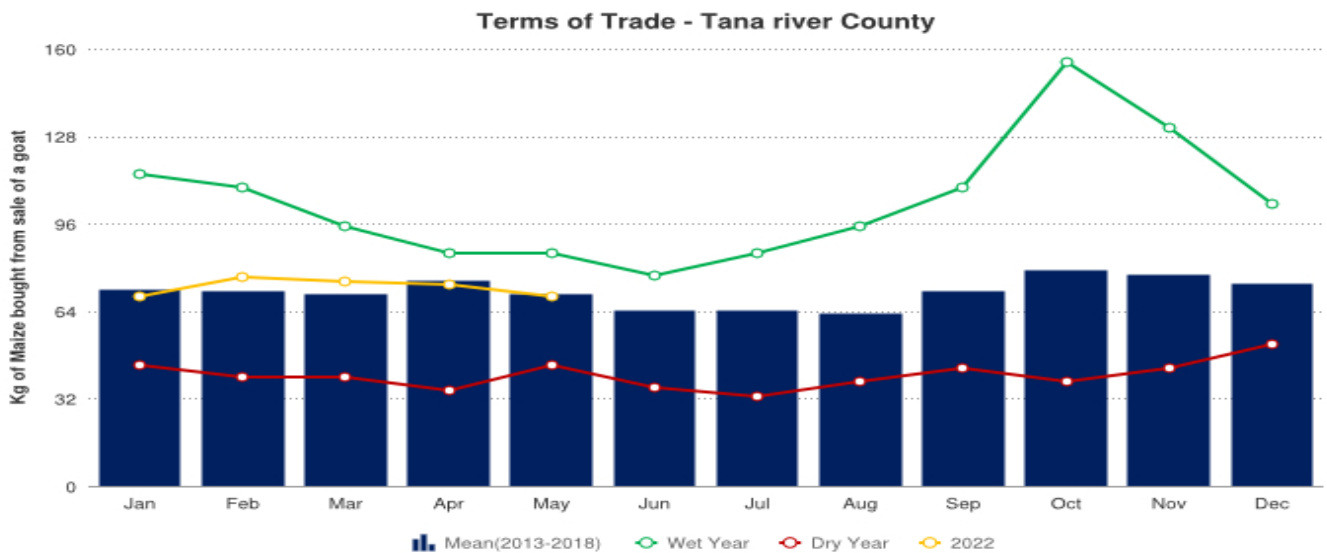
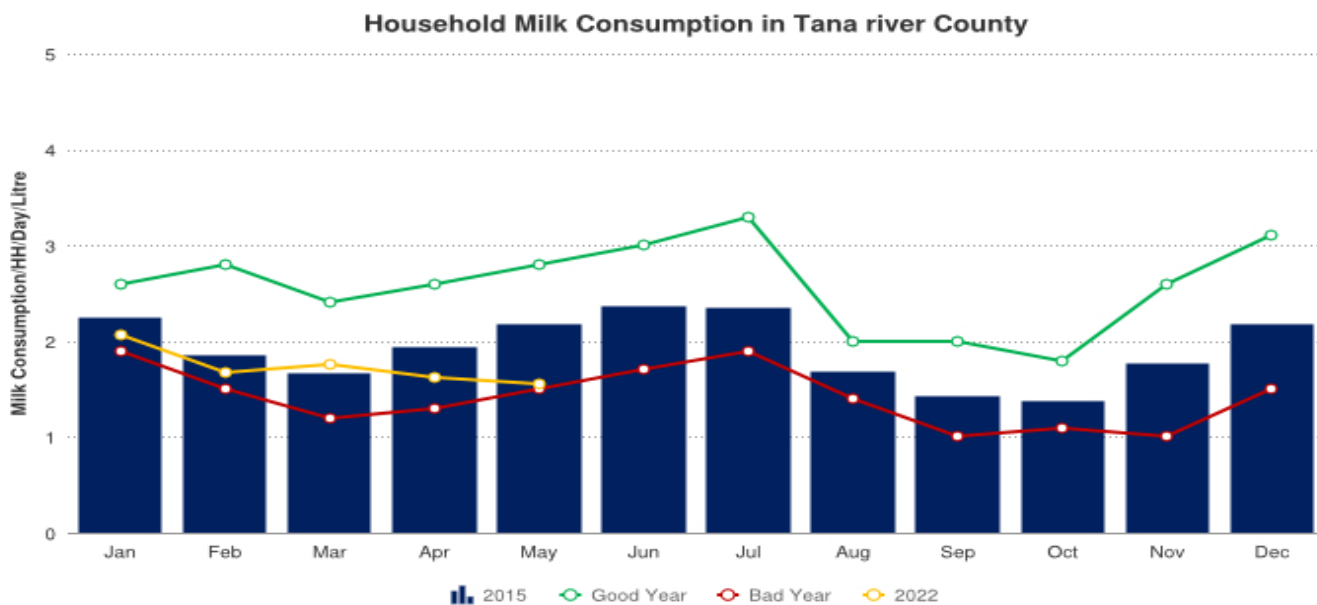


Fig .15.

- The terms of trade decreased from 73.7 in April 2022 to 69.1 during the month of May 2022.
- The current term of trade is below the long-term average. This is attributed to high prices of cereals compared to goat prices in the market. Terms of trade are still unfavourable for the pastoralists in the current month at 43.9 which is below normal at this time of the year.

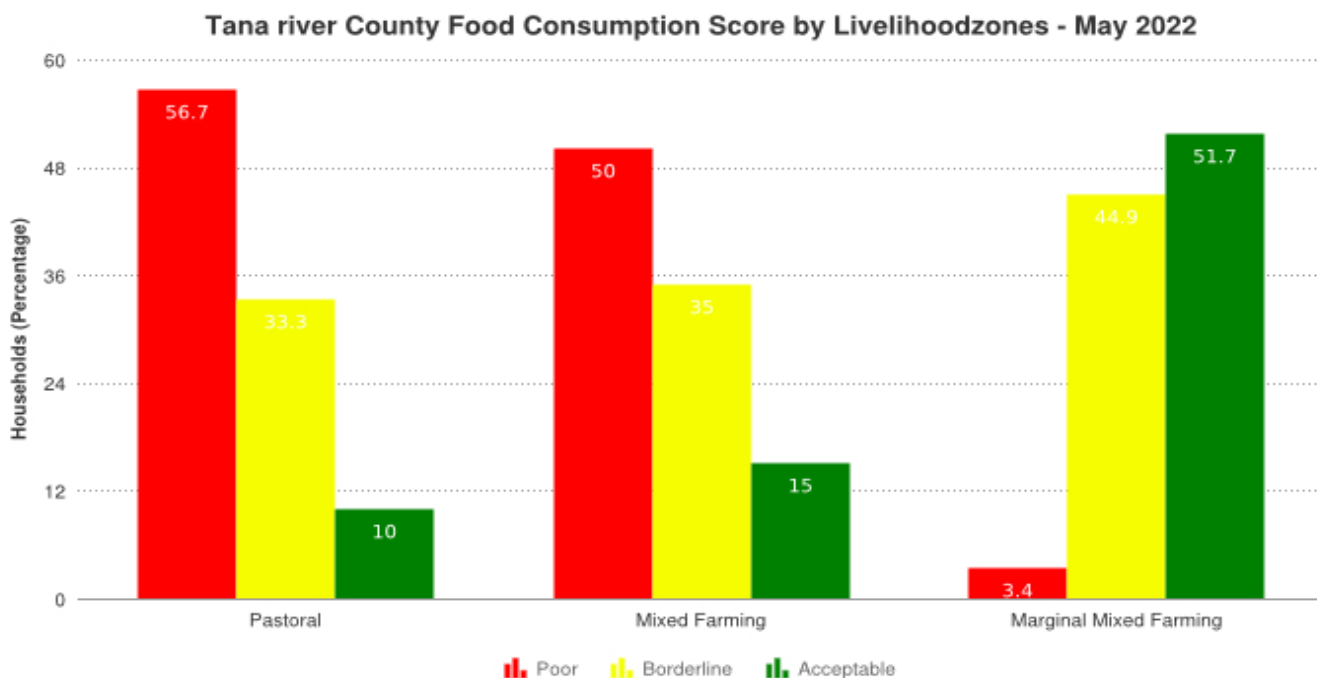
5.1. FOOD CONSUMPTION AND NUTRITION STATUS

5.1.1. Milk Consumption



- The average milk consumption per household decreased to 1.5 litres compared to the previous month.
- The amount consumed is below the long term average at this time of the year. This is attributed to depleted pasture and browse across the pastoral and marginal mixed livelihood zones. The little milk produced by households are normally sold as a source of income.

5.1.2. Food Consumption Score

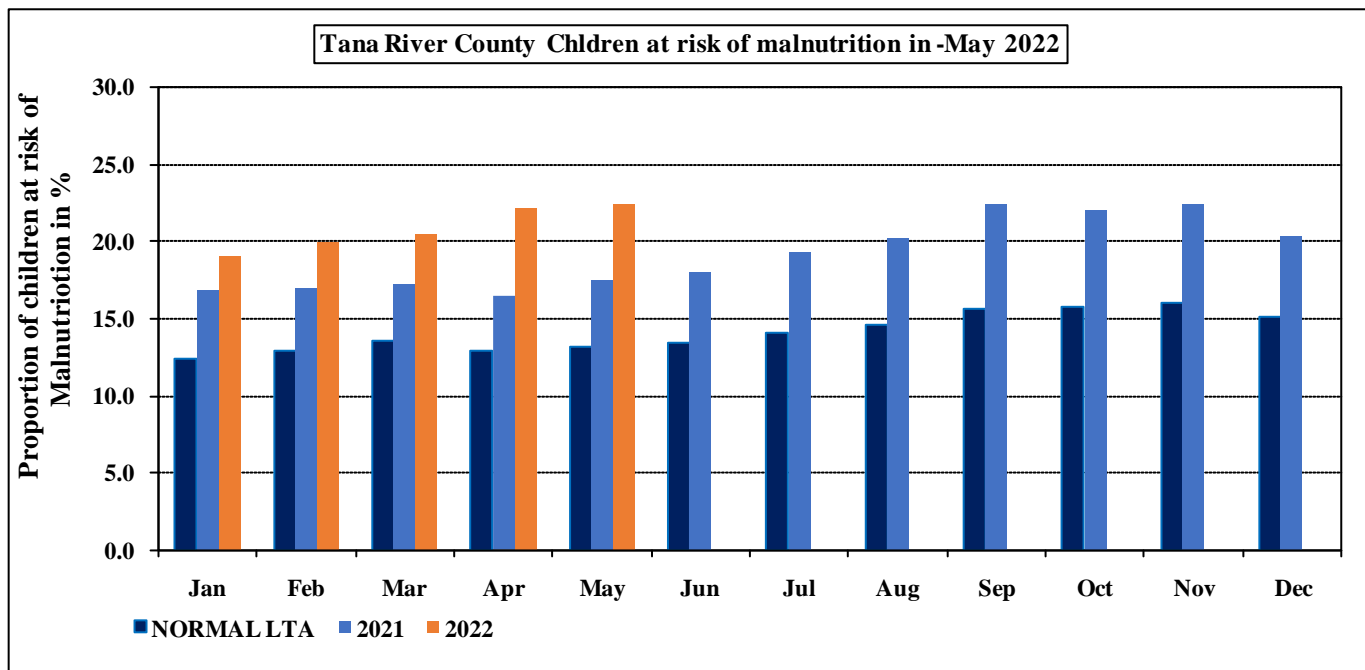


There was higher proportion of households with poor food consumption score in Pastoral Livelihood zones(56.7) and Mixed farming livelihood zones(50.0) and lowest in Marginal mixed livelihood zones(3.4%).Attributed to high food prices, lower purchasing power, lower access to a wide range of food groups, below average milk consumption and crop production.

The proportion of households with borderline food consumption score were high in Marginal mixed zones(44.9) Pastoral and Mixed farming livelihood zones at 33% and 35% respectively.

A proportion of 51.7% of households in Marginal mixed livelihood zones have acceptable food consumption score.

5.1.3 Health and Nutrition Status



- The proportion of sampled children under five years of age at risk of malnutrition increased to 24.4% compared to the previous month at 20.2%. This is attributed to reduction in milk consumption at household levels and scarcity of vegetables. High cases of malnutrition recorded in Pastoral livelihood zones.

5.2. Health

- Water borne diseases and Upper Respiratory Tract Infection (UTI) is the leading disease according to SMART survey report from MOH, followed by diarrhoea and malaria in all the sub counties. No outbreak of disease or unusual diseases was reported in April 2022. Majority of women in the pastoral and marginal mixed livelihood zones reported cases of Urinary Tract Infections (UTI) in all the sites visited. Most facilities in the county are located along the riverine, where the distance to the health facility in some areas is less than five km.

5.3. COPING STRATEGIES

Coping Strategy Index

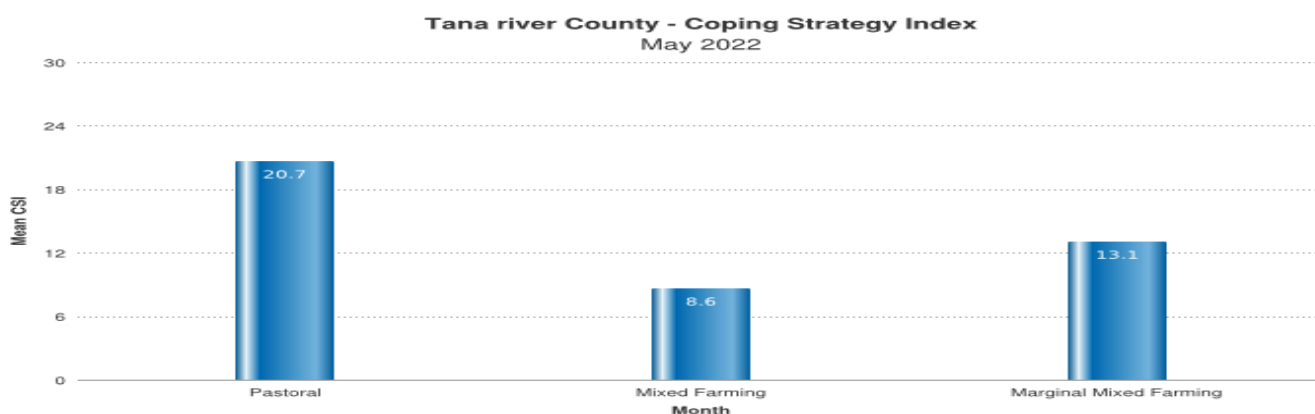


Fig.19:Tana River Coping Strategy Index

The average coping strategy index increased to 13.98 in May 2022 compared to last month. Meaning more households are still experiencing stress to access food and water given the prevailing conditions. This might have been due to high cost of living linked to high food prices and essential commodities during month, delayed onset off the season and low purchasing power.

Households in pastoral livelihood zones employed most coping strategies at 20.7 followed by marginal mixed livelihood zone at 13.1. The mixed farming livelihood zones employed least coping mechanisms at 8.6.

6. CURRENT INTERVENTION MEASURES.

6.1 Non-food and food interventions

6.1.1 World Vision Tana River

- Water trucking to 10 villages in Tana North - Titila, Chuma Mrefu, KBC, Boa, Hamaresa, Kacabso, Bisanharges, Yakrit, Bulto Banta and Bura Shugri in Tana North.
- Integrated health outreaches - mass screening in ten (30) hard to reach sites in Tana North to identify and treat malnourished children

6.1.2 Kenya Redcross Tana River(Krcs)

- Food distribution to 35,000 people across the county through sustainable food systems supported by KRCS and WFP(Bulley,beans,pulses and Vegetable oil).

6.1.3 County Government Tana River

- Support dissemination of community Action plans,DRM policy and Act.

6.1.4 World Food Programme(WFP)

- Sustainable food systems across the county targeting 35,000 people
- Provision of nutrition commodities for treatment of moderate acute malnutrition across the county.
- Support dissemination of community Action plans,DRM policy and Act.

6.1.5 National Drought Management Authority

- Updating of drought contingency plans.
- Dissemination of MAM 2022,JJA 2022 and sectoral advisories to the community and.
- Monthly Drought monitoring and drought early warning bulletins production.
- Mass registration of cash transfer beneficiaries across the county.
- Cordination of County and Sub county County steering groups meetings.

6.1.6 Interior(Office Of The County Commissioner

- Carry out Peace initiatives across the county.

6.1.7 Concern World Wide

- Logistical support for technical extension across the three sub counties.
- Tractor service- ploughing and ridging of 25 acres in Tana Delta sub county.
- Irrigation canal access for 1200 acres in Tana North and Tana River Sub counties.
- Active case finding and referral in 13 community health units across the county.

6.1.8 Plan international

- Provision of food and hygiene kits to 949 households in Chewani and Kinakomba wards.

6.1.9 Church World Service.

- Provision of relief food to 15,000 people for the next 4 months by Church World Service.

6.1.10 CISP

- Support dissemination of community Action plans,DRM policy and Act.
- Support Dissemination of MAM 2022,JJA 2022 and sectoral advisories to the community
- Mango Value additional training to Elimika group.
- Community dialogue sessions on positive norms on hygiene and for 400 women in 20 groups.
- Dissemination of Hygiene promotion messages through radio
- Unconditional cash transfer for 800 beneficiaries under the EU rebuild project in tana river sub-countyand tana delta sub county.

- Refresher training for veterinary officer on disease detection and management.
- Support to the dissemination of early warning information in the county through radio messages.

6.1.11 UNICEF

Provision of essential drugs through

- Provision of essential drugs for integrated medical outreach services
- Supporting procurement of therapeutic feeds and delivery to health facilities.
- Supporting integrated medical outreach services within 30 sites through KRCS.
- Supporting monitoring of malnutrition caseload surge within health facilities
- Supporting households' detection of malnutrition through family MUAC approach.

6.1.12 Pastoral Girl Initiative

- Cash transfer to 210 household affected by drought in Tana River County.

7.0 .EMERGING ISSUES

7.0.1.Insecurity/Conflict/Human Displacement

- Human wild life conflicts reported in Sala,Nanighi,Saka,Kipini,Chara and Kilelengwani.
- Increase in prices of the essential commodities as a result of increase in fuel prices.

- Increase tension in Tana Delta as a result of frequent terror attacks.
- Water stress in Pastoral and Marginal mixed livelihood zones;
hotspots:Lakole,Bisanghersa,Kinakomba,Wayu Duka,Wayu Boru,Waldena,
Boka,Roka,Buwa,Odowan,Elrar,Kamaguru,Tula,Lebille,Biyagadud,Bulto-banta,Woles-Kambi

7.0.2. Migration - limited to migrations of persons.

- Increased Livestock migration towards fall back grazing fields in Tana Delta. These might lead to tension between the herders and farmers.
- There is high influx of cattle and Camels from North eastern into the county, this has triggered resource based tension across Pastoral and marninal mixed livelihood zones.

7.0.3. Food Security Prognosis(effects on food security outcomes)

The County's food security prognosis for the next six months is based on the following assumptions:

- According to the New MAM weather outlook from the Kenya Meteorological department, the March to May 2022 rains season in bimodal areas of Kenya is most likely to be below average within the coastal strip.
- Based on under performance of the long rains there is high risk of crop failure in mixed and marginal mixed livelihood zones,food commodity prices in general and specifically cereal prices in the county are likely to increase above the long term average prices up to end of June.
- High cases of malnutrition cases expected in the next three months. Attributed to below average crop and livestock production and lower purchasing power.
- Forage and water resources are expected to be below normal until end of Mid October when the Short rains start. Increase in livestock migrations towards the fall back grazing fields expected in the next one-two months which might lead to increased cases of resource based conflicts within mixed livelihood zones.
- More households likely to have poor Food consumption score in the next two months given the poor performance of the long rains and high food prices triggered by high fuel prices, below average purchasing power, below average crop and livestock production.
- More households across all livelihood zones expected to apply irreversible coping strategies in the next three months in order to survive. Attributed to below average crop and livestock production and below average purchasing power due to poor performance of the short rains.

7.0.4. Phase Classification

According to recently conducted short rains food security assessment report and the poor performance of the long rains, Tana river county has remained in stressed phase (IPC Phase 2) with high possibility of progressing to Crisis phase (IPC Phase 3) in the next one month given the poor performance the long rains. Marginal mixed and Mixed livelihood currently classified in stressed phase(IPC Phase 2) while Pastoral livelihood is in Crisis phase(IPC Phase 3). The estimated population in urgent need of food assistance in Tana North and Tana delta is estimated to be 30-35 percent of the population,while population in need of urgent food assistance in Tana river sub county is estimated to be 25-30 percent of the population.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- a) Destocking highly recommended
- b) Implementation of Covid-19 response plans and regulations by Ministry of Health and partners .
- c) Provision of water treatment chemicals to address issues of increasing water borne diseases.
- 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) Installation of hand washing kits to existing schools in preparation for re-opening of schools.
- i) Provision of storage facilities to institutions to help with water storage during water trucking
- j) Mass vaccination and treatment of migrating herds to control the spread of livestock diseases.
- k) Provision of supplementary livestock feeds to affected livestock farmers with weak livestock.
- l) Provision of farm inputs to farmers within mixed farming and marginal mixed livelihood zones.
- m) Monitoring of the performance of the long rains and its impact on sectors.

8.1.2.PROPOSED RECOMMENDATIONS(SRA-2021)

County	Ward	Intervention	No. of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
Agriculture							
Tana river	All wards	Provision of Assorted farm inputs and tractors hire	5000	Department of agriculture and Stakeholders	Funding from the County	Technical experts	2020-2022
Tana River	Chewelee, Madogo, Sala, Hirimani	Assorted relief seeds- maize, rice, green grams		Department of agriculture GAA Concern Worldwide, ADS Pwani, World Vision.		Technical skills	2022
Tana River	Chewelee, Madogo, Sala, Hirimani	Effective locust invasion control		Department of agriculture and FAO	Chemicals Equipment	Technical skills	2022
Tana river	All wards	Rehabilitation and Establishment of new irrigation schemes	3000HH	Dept. of Agriculture	Funding from the County	Technical Experts	2020-2022
Livestock							
Tana River	Entire county	Entire co Fodder production and conservation to form a feed reserve unity	5,000 HH	Livestock	Land for irrigation Grass seeds Labour	Extension staff	Feb2022-Feb2023
Tana River	Entire county	Entire count Strengthening of grazing management committees to manage grazing resources	10,000 HH	Livestock -Pastoral community -sub county administrators -Internal security dept	Fuel Allowances Grazing control Act	Extension staff	Feb2022-Feb2023
Health and nutrition							
Tana river	Bangali, Sala, Chewelee, Hirimani, Wayu, Kinakombaa	Undertake integrated medical outreaches		MOH UNICEF World Concern World Vision KRCS	3,200,000	Technical Staffs	March-Jul
Tana river	Madogo, Bangali, Sala, Chewelee	Upscaling disease surveillance		TRCG-MOH KRC KANCO	500,000	Technical staffs	March-Jul
Tana river	Tana Delta	Implement Family MUAC		MOH UNICEF	2,500,000	Technical Staffs	March-Jul

		2 CUs		KRCS			
Tana river	Wayu, Kinakomb a, Chewani, Mikinduni	Protection Ration		TRCG/Plan International/CRS	4,800,000	Technical staffs	March-Jul
Tana river	Wayu, Kinakomb a and Garsen W Wards.	Promote Agri-Nutrition Activities amongst the MtMSGs and Farmer Groups		WFP, ADS-PWANI	3,500,000	Technical Staffs	Jul-Dec
Tana river	Hirimani, Wayu, Kinakomb a and Garsen W Wards.	Promote high nutrition Value crops- Orange Fleshed Sweet Potatoes, High Iron Beans		WFP/WHH	4,800,000	Technical staffs	Jul-Dec

Education

Tana River	Assa, Bangale, Dukanotu Wayu Waldena Chiffiri Chewele	Provision of clean water and school meals programmes to 16 pry and 8 Early Years Education centers	8522 pupils	MOE TRCG WHH WFP	2.9M	0	Immediate
Tana River	all	Borehole drilling,	213 schools, 92449 pupils	Partners, NGOs MOE TRCG	106.5 million	0.00	Immediately
Tana River		Construction of 534 classrooms	178 schools, 82811 pupils	MOE/NGCDF/TRCG/NG Os	373.8 million	0.00	Immediately

Water Sector

Immediate recommended Interventions

Sub County/ Ward	Intervention	Location	No. of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
Tana River/ Chewani	Stock piling of water treatment chemicals (pur and aquatabs) and household water storage facilities e.g. jerricans	N/A	10,000	TRCG, GOK, CWWDA and other development partners	Funds Transport vehicles Technical Staff	Technical staff	OCT-JAN

Tana River/ Chewani	Purchase and distribution of plastic (PVC) and collapsible water tanks	N/A	10,000	TRCG, GOK, CWWDA and other development partners	Funds Transport vehicles Technical Staff	Technical staff	OCT-JAN
Tana River/ Wayu	Operationalization of Boreholes	Titila, Konekaliti, Waldena, Wayu Boro	6,000	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	FUNDS & SPARE PARTS/FITTINGS TECHNICAL STAFF	TECHNICAL STAFF	OCT-JAN
Tana delta sub county/ Garsen west	Rehabilitation of shallow wells	Assa	2,500	TRCG, CWWDA and other development agencies	Funds, fittings, spare parts and technical staff	Technical staff	OCT-JAN
Tana delta sub county/ Garsen south	Rehabilitation of shallow wells	Wachu-oda	6000	TRCG, CWWDA and other development agencies	Funds, fittings, spare parts and technical staff	Technical staff	OCT-JAN
Tana delta sub county/ Garsen west	Rehabilitation of shallow wells	Assa	2,500	TRCG, CWWDA and other development agencies	Funds, fittings, spare parts and technical staff	Technical staff	OCT-JAN
Tana North/Sala and Hirimani	BOREHOLE REPAIR AND OPERATIONALIZATION	HIRIMANI Mororo	5,800	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	FUNDS & SPARE PARTS/FITTINGS TECHNICALS STAFF	TECHNICAL STAFF	OCT-JAN
TANA NORTH/ MADOGO & SALA	Distribution of collapsible tanks, jerricans and HH water treatment chemicals e.g., pur/aquatabs	Mororo & Madogo locations	3,000	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	FUNDS & SPARE PARTS/FITTINGS TECHNICALS STAFF	TECHNICAL STAFF	OCT-JAN

Medium and Long Term recommended Interventions

Tana delta/Garsen west	Drilling of more boreholes within the sub-county	Shirikisho	20,000	TRCG, CWWDA and other development agencies	Drilling rig, funds, technical staff	Drilling rig and technical staff	Oct-jan
Tana delta/Garsen south. west	Harvesting of water using 300,000M ³	Shirikisho Assa	5,000	TRCG, CWWDA and other development agencies	Drilling rig, funds, technical staff	Drilling rig and technical staff	Oct-jan
Tana delta	Purchase and distribution of collapsible tanks, stock piling of water treatment chemicals (pur & aquatabs)	N/A	50,000	TRCG, CWWDA and other development agencies	Store, funds and technical staff	Technical staff	Oct-jan
Tana delta/Garsen west	Drilling of more boreholes within the sub-county	Shirikisho	20,000	TRCG, CWWDA and other development agencies	Drilling rig, funds, technical staff	Drilling rig and technical staff	Oct-jan
Tana River/Wayu Tana North/Bangale, Hirimani, Sala	De-silting and repair of Water Pans	Gofisa Kesi Hakoka Lakole Bangale Hirimani Sala-Areri	33,500	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	Funds, Excavation Machinery, Technical Staff Vehicles for mobility during implementation and M & E.	TECHNICAL STAFF	Oct-jan
Tana River/Kinakomba	Flushing, development and equipping of Strategic Boreholes	Haroresa	2,700	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	FUNDS FOR MACHINERY OPERATORS, FLUSHING & DEVELOPMENT MACHINERY, FUELS FOR MACHINERY, TECHNICAL STAFF	TECHNICAL STAFF FLUSHING MACHINERY	Oct-jan

Tana River/Wayu	Construction of 50,000m ³ - 100,000m ³ large water pans to harvest the excess runoff	Wayu, Chifiri, Kesi	7,500	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	Funds, Excavation Machinery, Technical Staff Vehicles for mobility during implementation and M & E.	TECHNICAL STAFF	Oct-Jan
Tana River/Kinakomba	Construction of 50,000m ³ - 100,000m ³ large water pans to harvest the excess runoff	Haroresa,	2,700	COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	Funds, Excavation Machinery, Technical Staff Vehicles for mobility during implementation and M & E.	Technical Staff	Oct-Jan
Tana River/Cross Cutting	Capacity Building of Technical officers and Community on Disaster Risk Management			COUNTY GOVERNMENT, GOK, NGOs & OTHER DEVELOPMENT PARTNERS	Funds Vehicles for mobility		Oct-Jan

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.