A Vision 2030 Flagship Project

National Drought Management Authority
SAMBURU COUNTY
DROUGHT EARLY WARNING BULLETIN FOR MARCH 2022

Drought Situation & EW Phase Classification

Biophysical Indicators
- The county remained predominantly dry with high temperatures. However, partly clouds were observed from 24th March 2022 that resulted in erratic downpour in isolated areas between 24th – 27th March 2022.
- Pasture remained depleted with browse condition being poor across the livelihood zones.
  Most of the open surface water sources remained dry and boreholes yields is low due high abstraction rates.

Socio Economic Indicators Details
- Livestock body condition remained very poor to poor across all the livestock species.
- Trekking distances for households and livestock increased further due to shortage of water.
- Livestock are still in dry grazing areas with over 80 percent of cattle still grazing outside the county. Consequently, resource-based conflicts escalate among herders.
- Livestock selling prices are below the average. Staple food commodities such as cereals increased due to shortage.
- The prevalence of malnutrition rates of children below five years based on family MUAC continued to worsen across the county.

Early Warning Phase Classification

<table>
<thead>
<tr>
<th>LIVELIHOOD ZONE</th>
<th>EW PHASE</th>
<th>TRENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agro-pastoral</td>
<td>Alarm</td>
<td>Worsening</td>
</tr>
<tr>
<td>Pastoral (North)</td>
<td>Alarm</td>
<td>Worsening</td>
</tr>
<tr>
<td>Pastoral (East)</td>
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<td>Worsening</td>
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<tr>
<td>County</td>
<td>Alarm</td>
<td>Worsening</td>
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Biophysical Indicators

<table>
<thead>
<tr>
<th>Value</th>
<th>Normal range/Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCI 3-month</td>
<td>County 16.45</td>
</tr>
<tr>
<td></td>
<td>Samburu East 13.87</td>
</tr>
<tr>
<td></td>
<td>Samburu West 17.81</td>
</tr>
<tr>
<td></td>
<td>Samburu North 19.1</td>
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</table>

Production indicators

<table>
<thead>
<tr>
<th>Value</th>
<th>Normal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock Migration Pattern</td>
<td>Out, intra &amp; inter Migration</td>
</tr>
<tr>
<td>Livestock Body Conditions</td>
<td>Emaciated, thin fore ribs visible</td>
</tr>
<tr>
<td>Milk Production (Litres/Household/day)</td>
<td>Nil</td>
</tr>
<tr>
<td>Livestock deaths due to drought</td>
<td>Cattle &amp; sheep deaths.</td>
</tr>
</tbody>
</table>

Access Indicators

<table>
<thead>
<tr>
<th>Value</th>
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<tbody>
<tr>
<td>Terms of Trade (TOT)</td>
<td>50</td>
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<tr>
<td>Milk Consumption (Litres/Household/day)</td>
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</tr>
<tr>
<td>Return distance (km)</td>
<td>Household 10.3</td>
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<td></td>
<td>Livestock 16.7</td>
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Utilization indicators

<table>
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<th>Value</th>
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<tbody>
<tr>
<td>MUAC (%) Severe Malnourished</td>
<td>0.9</td>
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<tr>
<td>FCS (%) Poor</td>
<td>8.6</td>
</tr>
<tr>
<td>Borderline</td>
<td>58.3</td>
</tr>
<tr>
<td>Acceptable</td>
<td>33.1</td>
</tr>
</tbody>
</table>

- Short rains harvests
- Short dry spell
- Reduced milk yields
- Increased HH Food Stocks
- Land preparation
1.0 CLIMATIC CONDITIONS

1.1 Rainfall Performance

The period under review has been characterized mainly by sunny, dry and windy weather conditions over most parts of the county. Maximum daytime temperatures ranged from 28°C to 39°C and minimum nighttime temperatures ranging between 11°C and 24°C prevailed over several parts of the county. Isolated areas of Baragoi town, Ngilai and Bendera received heavy showers on 24th March 2022. Kenya meteorology department (KMD) predict that the onset of the 2022 long rains season is expected from the 4th week of March to the 1st week of April 2022. The previous 2021 short rains season was erratic and below average rainfall season.

1.2 Amount of Rainfall and Spatial Distribution

The county was dry with light showers experienced which are below the long-term average, for instance in the first dekad, of March 2022 precipitation was 69 percent below average and 76 percent below average in the second dekad per (Climate Hazards Centers Group InfraRed Precipitation with Station data (CHIRPS). During the third dekad, marginal pockets received erratic rains which were 44 percent below the long-term average at the period similar period of the year (Figure 1). Distribution in terms of space was uneven and poor distribution in terms of time as sunny and dry conditions prevailed across the county.

![Figure 1: Dekadal Rainfall Estimates (RFE)](image-url)
2.0 IMPACTS ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (3 month-VCI)

The forage condition has depleted across the livelihood zones driven by poor rainfall performance for the last three consecutive seasons coupled with above average land surface temperatures. Satellite imageries data indicates negative anomaly in Normalized Difference Vegetation Index (NDVI). The remote sensing data for 3-month average vegetation condition index showed severe drought with a county wide VCI value of 16.45. the average 3-month VCI for sub counties was 13.87 for Samburu East subcounty, 17.81 for Samburu West and 19.1 for Samburu North. Depletion of vegetation cover coupled with over grazing has exposed rangeland to high soil erosion therefore high land degradation. The degraded rangelands have supported resurgence of invasive plants such as (Rarati) that engulfs fodder trees especially *Acacia tortilis* and *Acacia reficen* have been observed in areas of Wamba North, Elbarta, Wamba West and Waso wards. The current rangeland conditions are likely projected to worsen in the next three weeks until the expected 2022 March to May rains set in.

![3-monthly VCI for Samburu](image)

![3-monthly VCI for Samburu East](image)

**Figure 2:** VCI Trends for Samburu County and Samburu East Subcounty  
(Source: Boku University)
2.1.2 Field Observations (Pasture and Browse Conditions)

Quality and Quantity

The palatable vegetation cover has depleted consequently exposing the rangeland into degradation therefore possibility of high soil erosion. Pasture and browse are very poor both in terms of quality and quantity across all the livelihood zones in the county. The condition of the vegetation is likely to remain depleted till the onset of the expected 2022 long rains season. Sentinel site data showed that among the sampled key informants, 88 - 100 percent of them responded that pasture and browse is poor in terms of quantity and quality. Only 11.8 percent of the key informants responded that browse is fair in isolated pockets of Agro pastoral and Pastoral livelihood zones. Communities are currently feeding the cattle herds with hay and other livestock feeds which include drought pellets and other cutting tree branches for their livestock. There are reports of isolated cases of herdsmen falling down from trees in areas such as Kirisia forest resulting into injuries and even death.

2.2. Water Resource

2.2.1 Sources

The typical surface water sources such as water pans and dams have depleted unseasonably early in January, compared to late February and early March normally leaving strategic boreholes and traditional river wells as the main sources. However, the low number of available boreholes and traditional river wells and the increased dependency is resulting in increased travel distances for households and herders to access water. The most relied water sources during the period under review are boreholes, traditional river wells and shallow wells. Increased dependency on boreholes has resulted into overuse consequently low water table and frequent breakages. The increase usage of boreholes and wells by livestock and households is driven by water shortage due to drying up of surface water sources across the livelihood zones. Sampled community informants showed that boreholes are relied by around 30 percent of the households as a source of water.
Another 24 percent and 18.2 percent depend on traditional rivers wells and shallow wells for water respectively. Other minor sources of water include pans and dams, springs and streams (Figure 4). The situation is likely to improve if the expected 2022 March to May rain season sets in on time. Water costs at the source has increased due to increased boreholes maintenance levy as a result of frequent breakages. The long trekking distances and increased waiting time at the water sources has continue to strain households access to water thus low water consumption at household level. Majority of the sampled households at sentinel sites indicated using 20 – 40 litres of water for domestic use which translate to 4 – 8 litres per person per day. However, households in upper highlands of Samburu central sub county reported water consumption of 8 litres per person per day. Households are charged for water in some boreholes, for instance households in Lodung’okwe pay Ksh 10 for a 20 litre jerrica. However, private water vendors in urban centres are supplying water at a cost of Ksh 20 - 30 per 20 litre jerrican inclusive of transportation charges.

2.2.2 Household Access and Utilization

- Households have to continue to face challenges of long trekking distances and long waiting time at water points due to low yields coupled with high concentration of livestock at the watering points. The current average distance has doubled the normal average distance with community key informant reporting walking an estimated average distance of 10.3 km in search of water. The increase is attributed to depletion of many open surface water sources due to prolonged dry spell.
- Competition for water by livestock and humans have seen herders (morans) restriction fetching of water for domestic use in some borehole till all the livestock have been waters. Consequently, this has led to long waiting time for women at boreholes.
- The current average distances to water points for households is above the 2019 – 2021 average and last month average by 80 percent and 16 percent respectively at the same period of the year (Figure 5).

![Figure 5: Average Distance Travelled by Households in Search of Water](image)

2.2.3 Livestock Access (Grazing Distances to Water Points)

- Long trekking distances for livestock from grazing fields to watering points continued to observed across the county. The long distances are attributed to depleted pastures, browse and water resources occasioned by prolonged dry spell.
- The current average trekked by livestock in search of forage and water is 16.7 km compared to last month distance of 16.1 km.
- Trekking distances increased across the livelihood zones with longest distances reported Wamba North, Waso, Nachola and Wamba West wards. The areas remained above the normal distances with averaging at around 17 – 26 km.
- On average, the current return trekking distance remained above the 2019 – 2021 average by 25 percent at the same period of the year (Figure 6).

![Figure 6: Distance Travelled from Grazing Areas to Water Points](image-url)
3.0 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

The dry spell continued to negatively impact on livestock body conditions. All livestock species body condition is below average and ranging from poor to very poor for cattle, sheep and fair to poor for goats and camels. Majority of cattle have been observed to have extreme thinness from absence of body fat and muscle wasting usually resulting from malnutrition and others are even supported to stand up due to weak body. The livestock body conditions are likely to continue deteriorating since the March to May 2022 rainfall seasons has not yet started.

3.1.2 Livestock Diseases and Deaths

- Due to starvation, disease, and long trekking distances, declining livestock health has resulted in widespread livestock deaths across the livelihood zones. The 2021 short rains assessment 9SRA 2021) indicated that livestock mortality rates are estimated at 10 percent for cattle and five (5) percent for sheep due to adverse effects of drought (SRA 2021 Report). The livestock deaths were observed within the young, lactating livestock and the old age stock.

3.1.3 Milk Production

- Sampled households reported nil milk production a household level. Mass migration coupled with loss of livestock due to starvation has resulted into lack of milk at household level. Community key informants also reported there is no raw milk ( unpasteurized) hawked in the markets thus households except packet milk available in shops which is very expensive for rural households due to eroded purchasing power.

- The current average milk production is below the 2019 – 2021 average by around 100 percent at the same period of the year (Figure 7).

3.2 Rain Fed Crop Production

3.2.1 Stage and Condition of Food Crops

- Few farmers have started land preparation with majority of the farmers not willing to plough till the onset sets in. Also, the current distress of the dry spell has negatively affected households’ income patterns thus majority cannot afford the ploughing rates.

3.2.2 Harvest of Crop

- There was no any crop harvest within the period under review.
4.0 MARKET PERFORMANCE

4.1 Livestock Prices

4.1.1 Cattle Prices

- Livestock body condition continued to emaciate due to starvation driven by depletion of pasture, browse and water resources. The poor to very poor livestock body conditions have resulted in sustained below average prices at the markets.
- The current cattle average price was Ksh 16,560 compared to Ksh 17,000 recorded in the month of February 2022.
- Traders from Kajiado and Narok counties have flocked into the county markets buying emaciated and old aged cows at a price ranging between Ksh 5,000 – 10,000 depending on the Cachexia (weakness and wasting of the body).
- Most markets sampled reported no sale of cattle as a result of no cattle in wet grazing areas driven by mass out migration of cattle to Isiolo, Nyeri and Nyandarua counties in search of forage and water. The few markets that reported sale of cattle recorded an average price of about Ksh 15,000 – 18,500 for mature and healthy cattle.
- The current average cattle price of Ksh 17,000 is below the 2019-2020 average by around 15 percent at the same period of the year (Figure 8).

![Figure 8: Cattle Selling Price Trends at Market Level](image)

4.1.2 Goat Prices

- Like cattle, goats average price decreased attributed to poor body condition with the current average price standing at Ksh 2,750 for a healthy and mature goat compared with Ksh 2,800 recorded in last month.
- Sampled markets reported goats selling prices ranging between Ksh 2,000 – 3,800 for a goat. Low prices were noticed in Illaut market while better Archers Post, Nairimirimo markets. Notably Lolkuniani market was closed during the period under review due to morans and traders’ conflicts. The security agency and community leaders are addressing the issue to bring back peaceful trading in the market and even along the Wamba to Archers Post Road.
- In comparison to the 2019 – 2021 long term average, the current is seven percent below the average at this time of the year (Figure 9).
Figure 9: Goats’ Selling Price Trends at Market Level

4.1.3 Sheep Prices
- Sheep prices also remained below the average across the livelihood zones. The current average sheep selling price is Ksh 2,135 for a healthy sheep. Most of household’s income is generated from goats and sheep and currently spend on staple food commodities and costs related to livestock feeds such as hay and pellets. Archers Post and Longewan markets recorded better prices at around Ksh 2700 – 2750 while Illaut had the lowest at Ksh 1,670.
- In reference to 2019 – 2021 long term average, the current average price of Ksh 2,135 was below the three-year average by 12 percent at the same time of the year (Figure 10).

Figure 10: Sheep Selling Price Trends at Market Level

4.2 Crop Prices
4.2.1 *Posho* (Maize)
- The consecutive crop failure in the county and below average yields nationally have driven high proportion of households to be market reliance for food commodities. In return, maize deficit led to high demand for maize in the market has occasioned increase in maize prices.
- The average maize market price is Ksh 54 per kilogram which comparable to last month average
price of Ksh 53 per kilogram.

- In reference to the three years average (2019 – 2021), maize average price remained above average by 16 percent at the same period of the year (Figure 11).

![Maize Meal Price Trends](image1)

Figure 11: Maize Meal Price Trends

4.3 Terms of Trade (TOT)

- The goat to maize terms of trade continued to deteriorate following the decrease in goat selling prices and increase in maize prices. The decline in terms of trade has led to unfavourable households’ terms of trade since household can only purchase 50 kilograms of maize by income obtain from sale of one goat.

- Better terms of trade were observed in Agro-pastoral livelihood zone supported by better market infrastructure and road network. Households in Agro Pastoral livelihood zone exchange income obtain by sell of one goat with 75 kilograms of maize while households in Pastoral livelihood zone purchased 54 kilograms.

- The current terms of trade are below average in reference to the 2019 – 2021 average by 23 percent at similar time of the year which is unfavourable to households (Figure 12).

![Trends in Terms of Trade (TOT)](image2)

Figure 12: Trends in Terms of Trade (TOT)
5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

- Sentinel site data for sampled households indicated nil milk consumption from own production at household level resulting from nil production at household level. The rural household were unable to buy packet milk due to high price. Livestock migration and poor to very poor body condition of herds left at homestead is the main drivers of lack of milk at household. The long dry spell has also negatively affected the breeding cycle of the livestock.

![Figure 13: Trends in Milk Consumption per Household](image)

5.2 Food Consumption Score (FCS)

Food consumption score is a food security proxy indicator that captures household diet and consumption frequency over a seven-day period. Sentinel sites data for sampled households showed that majority of households have borderline food consumption meaning they are consuming staples and vegetables every day, accompanied by oil and pulses a few times a week. Approximately, 76.7 percent and 54.5 percent of households in Agro Pastoral and Pastoral livelihood respectively had borderline food consumption. Another 10.3 percent of the Pastoral households had poor food consumption implying households are not consuming staples and vegetables every day and never or very seldom are consuming protein rich food such as meat and dairy. Only 23.3 percent of the sampled households in Agro Pastoral and 35.2 percent of the households in Pastoral livelihood zone had acceptable food consumption signifying that they are consuming staples and vegetables every day, frequently accompanied by oil and pulses and occasionally meat, fish and dairy (Figure 14).

![Figure 14: FCS Per Livelihood zone](image)
5.3 Health and Nutrition Status

5.3.1 MID Upper-Arm Circumference (MUAC 125-134 mm)

Nutritional status for children under five years continued to worsen lack of milk at household level due to poor body condition and mass migration of livestock in search of forage and water. In addition, improper pre-natal care, poor child feeding practices and upsurge of community conflicts due to competition for forage and water for their livestock. The proportion of sampled under five children at risk of malnutrition is 34.9 percent. According to sentinel data, areas of Waso, Wamba West, Wamba North, Ndoto and Nachola wards reported high rates of malnutrition for children under five years. Out of the total sample children, 341 were females and 309 were males.

Health

According to sentinel sites data, a proportion of 12 percent of the sampled children under-five years of age had fever with breathing difficulties, another six (6) and three (3) percent had fever with chills like malaria and diarrhoea respectively. Health facility data for January – March 2022 showed that 7058 of under-five and 13325 of above five-year population were diagnosed with upper respiratory tract infections (URTI), diarrhoea and pneumonia were the second and third most illness suffered by both under-fives and general population as shown in the table below.

Table 1: Morbidity for Under-fives and General Population for September 2021

<table>
<thead>
<tr>
<th>DISEASE</th>
<th>UNDER FIVE</th>
<th>GENERAL POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Respiratory Tract Infections</td>
<td>7058</td>
<td>13325</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>3539</td>
<td>2319</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1574</td>
<td>3416</td>
</tr>
</tbody>
</table>

(SOURCE: KHIS2 - MOH 705 A & B)

5.3 Reduced Coping Strategies Index (rCSI)

Depletion of household food stocks coupled with eroded purchasing power has forced households to engaged in stress and crisis coping strategies which include reducing the portion size of meal and quantity of food consumed by adults to ensure children had enough to eat. The mean rCSI was 12.73 with household in Agro Pastoral having average rCSI of 10.5 while household in Pastoral livelihood zone had average rCSI of 13.2. Other frequently used strategies were food consumption related which includes relied on less preferred and/or less expensive food and reduced non-food items. Small proportions of households living around the urban centres are routinely employing charcoal burning as a coping mechanism.
6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS

6.1 Non-Food On-going Interventions

Table 2: Non-food On-going Interventions

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>• Replacement of conductors at Maralal water supply</td>
</tr>
<tr>
<td></td>
<td>• Repair of Lpartuk borehole</td>
</tr>
<tr>
<td>Livestock</td>
<td>• Purchase and distribution of 668 Somali camels to beneficiaries in Samburu North and East sub counties.</td>
</tr>
<tr>
<td></td>
<td>• Provision of 8 dairy cattle in Lodokejek Ward</td>
</tr>
<tr>
<td></td>
<td>• Purchase and distribution of Dorper sheep (80 in Poro Ward and 80 in Angata Nanyukie Ward)</td>
</tr>
<tr>
<td>Health</td>
<td>• Kenya Red cross county office supported integrated medical outreaches reaching a total of 2402 people in Leiroyia, Lchakwai, Mpirish, Raraiti, Lorok Enyekie, Murankai, Opiroi, Lpusi and Lorok Lolmongo</td>
</tr>
<tr>
<td>Peace and Security</td>
<td>• Inter – community and inter - county peace dialogues and negotiations for pasture access.</td>
</tr>
<tr>
<td>Social Protection</td>
<td>• Registration of 1750 households to benefit for cash transfer in parts of Samburu North and Samburu East sub counties funded by USAID through NAWIRI (Mercy Corps).</td>
</tr>
</tbody>
</table>

6.2 FOOD AID

- Relief food and cash transfer was implemented by various partners to cushion household from food hunger gaps resulting from the ongoing drought.

7.0 EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Conflicts were reported in Kuro in border of Samburu and Isiolo counties due to competition for water and pastures by herders. incidences of livestock theft continued to be reported in Samburu North sub county.

7.2 Migration

- Depleted forage and water resources have kept livestock in dry season grazing areas and continuing to migrate in search of pasture and water, resulting in conflict among communities over rangeland resources. Over 80 percent of all livestock species were reported to have move to outside the county in search of pasture and water resources.

7.3 Food Security Prognosis

- The below average performance of the last three consecutive rainfall seasons have resulted to poor rangeland regeneration thus pasture and water sources expected to dwindling further till the onset of the next rainfall season.
- Low acreage in area planted for maize and beans is likely to result into dismal crop yields in the Agro Pastoral zone.
- Maize prices are expected to increase in the six months as stocks deplete at the household level.
- Prevalence of children at risk of malnutrition is likely to increase further as adverse drought effects impact negatively on households.
- Resource based conflict is projected to increase aggravated competition of scarcity forage and water resources.
8.0 RECOMMENDATIONS

Table 3: Proposed Interventions per Sector

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>• Support water trucking in Samburu East and North sub counties for communities in hard-to-reach areas and health facility.</td>
</tr>
<tr>
<td></td>
<td>• Purchase of genset fuel subsidy and support repair of boreholes</td>
</tr>
<tr>
<td>Livestock</td>
<td>• Support targeted livestock feeds supply and distribution (hay and other concentrates).</td>
</tr>
<tr>
<td></td>
<td>• Facilitate slaughter-destocking across the county for livestock with very poor body condition and high risk of mortality.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>• Support communities in land preparation by provision of tractor fuel and maintenance of tractors.</td>
</tr>
<tr>
<td>Health and Nutrition</td>
<td>• Mass screening in hot spots such as Nachola, Wamba North, Wamba West, Ndoto and Waso.</td>
</tr>
<tr>
<td></td>
<td>• Upscale support outreaches costs in hard-to-reach areas</td>
</tr>
<tr>
<td>Education</td>
<td>• Support repair of gutters, provision of water tanks and cleaning of tanks in schools.</td>
</tr>
<tr>
<td>Peace and Security</td>
<td>• Support peace initiatives in the hot spots areas where livestock have converged and inter county negotiations.</td>
</tr>
</tbody>
</table>