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CLIMATE OUTLOOK FOR THE OCTOBER -DECEMBER 2022 "SHORT-RAINS" SEASON AND REVIEW OF THE MARCH – MAY-JUNE-AUGUST SEASONS

Ref No: KMD/FCST/5-2022/SO/03 | **Issue Date: 31/08/2022**

1.1. Forecast for the October-November- December 2022 "Short Rains" Season

The Climate Outlook for the October-November-December (OND) 2022 "Short Rains" season indicates that most parts of the country are likely to experience depressed rainfall with higher probabilities over the eastern sector. This will be driven by cooler than average Sea Surface Temperatures (SSTs) over the western Equatorial Indian Ocean (adjacent to the East African coastline), coupled with warmer than average SSTs over the eastern Equatorial Indian Ocean (adjacent to Australia). This constitutes a negative Indian Ocean Dipole (IOD) that is unfavorable for enhanced rainfall over most of East Africa. Additionally, the SSTs over much of Central and Eastern Equatorial Pacific Ocean are below average, suggesting the presence of La Niña conditions. La Niña conditions are likely to persist throughout the OND season, according to most of the global climate models. Throughout the season, it is anticipated that most areas will have a generally poor distribution of rainfall in both time and space. A Standardized Precipitation Index (SPI) analysis of observed and predicted precipitation for 3, 6, and 12 months indicates long-term rainfall deficits in several parts of Kenya. The temperature forecast suggests that for the larger part of the country, the season is likely to be warmer-than-average, especially over the Eastern parts of the country.

1.2. September 2022 Weather Outlook

On average, several parts of the country will experience generally sunny and dry weather conditions during the month of September. However, the Lake Victoria Basin, the Highlands West of the Rift Valley, Central Rift Valley and parts of the Southern Rift Valley are likely to experience above average rainfall. Occasional light morning showers are expected along the Coastal Strip while the Highlands East of the Rift Valley (including Nairobi County) are likely to experience occasional afternoon showers as well as occasional cloudy conditions in the mornings especially at the beginning of the month. Sunny and dry conditions are, however, likely to prevail over the Northeastern, Southeastern, Coastal strip and most of northwestern throughout the month.

1.3. Review of the March-April-May 2022 Rainfall Season

An assessment of the rainfall recorded from 1st March to 31st May 2022 indicates that the rainfall performance was depressed over the country. The distribution, both in time and space, was generally poor over most parts of the country. The month of March recorded depressed rainfall over most parts except Moyale, Kisumu, Voi and Laikipia that recorded near average rainfall. In April and May 2022, most parts of the country received near to below average rainfall except Wajir and Nakuru that recorded above average rainfall in May. The season was characterized by long dry spells due to development of tropical cyclones over the southwest Indian ocean which affected the overall distribution in space and time.

The onset of the seasonal rainfall was well within the predicted times over several parts of the country except over the Highlands West of the Rift Valley and most of the Coastal region where the onset was late as well as over the Northwest, Northeast and a few areas over the Central Rift Valley where onset was not defined.

1.4. Review of the Rainfall in June-July-August 2022

Several parts of the country experienced dry weather conditions. However, the western sector of the country, the coastal region and a few areas over the Highlands East of the Rift Valley experienced rainfall during June-July-August (JJA) 2022. Near average to above average rainfall was recorded over several parts of the Highlands West of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley. Near average rainfall was recorded along the Coastal region, while near to below average rainfall was experienced over the Highlands East of the Rift Valley, including Nairobi County. Cold and cloudy conditions were observed over the Central and Southern Rift Valley and the Highlands East of the Rift Valley, including Nairobi County. The Northeast, Northwest and Southeastern lowlands remained generally dry. The JJA temperatures were generally warmer than average over much of the country.

2. FORECAST FOR OCTOBER-NOVEMBER-DECEMBER 2022 SEASON

2.1. Rainfall Forecast

The "Short Rains" October-November-December (OND) 2022 season constitutes an important rainfall season in Kenya, particularly in the Central and South-eastern regions of the country.

During OND 2022, it is expected that most parts of the country will experience depressed (below average) rainfall that will be poorly distributed in both time and space. However, isolated incidences of storms that could cause flash floods are likely to occur despite the expected depressed rains.

The areas likely to receive **below-average (depressed) rainfall** are:

The Lake Victoria Basin, Highlands West of the Rift Valley and Central and South Rift Valley, Counties in North Western Kenya; parts of the Highlands East of the Rift Valley, parts of the southeastern Kenya: these areas are marked **Zone 2** in ***Figure 1a***.

The areas with **increased probabilities for below-average (highly depressed) rainfall** are indicated over North Eastern Counties, Coastal region, much of southeastern Kenya, and parts of the Highlands East of the Rift Valley; these areas are marked **Zone 3** in ***Figure 1a.***

However, a small section of the western sector of the Country (Bungoma, Kakamega, Busia, Trans Nzoia, and parts of West Pokot), marked as **Zone 1** are likely to receive near-average, tending towards below average rainfall.

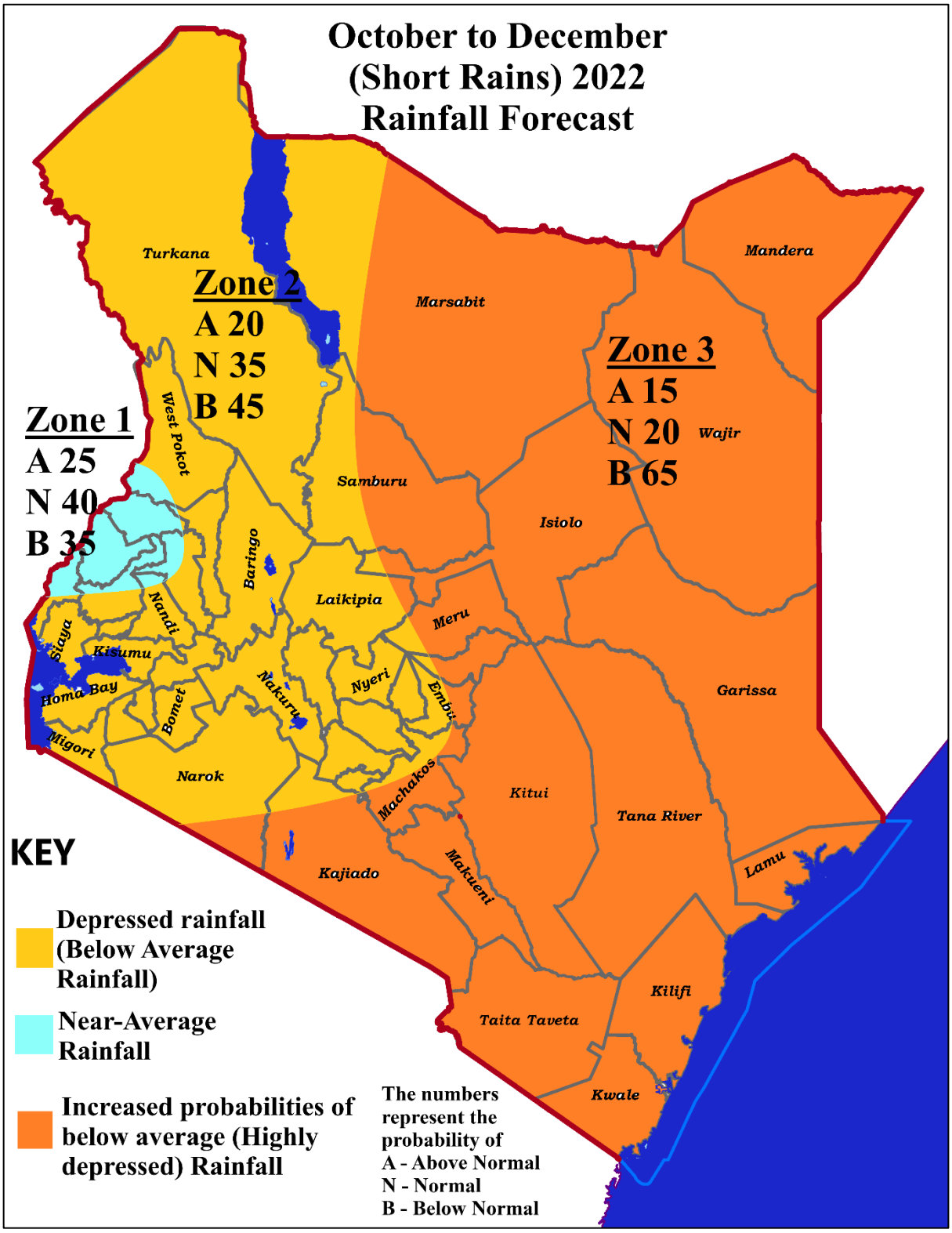

Figure 1a: Rainfall outlook for OND 2022 (Zone 1- Near average to below average rainfall; Zone 2- Below average rainfall (Depressed) and Zone 3 (Highly depressed rainfall)

The specific outlook for October-November-December (OND) 2022 is as follows:

2.1.1 The Lake Victoria Basin, Highlands West of the Rift Valley and Central and South Rift Valley: (Siaya, Kisumu, Homa Bay, Migori, Kisii, Nyamira, Baringo, Uasin Gishu, West Pokot, Elgeyo Marakwet, Nandi, Kericho, Vihiga, Laikipia, Nakuru and Narok): In these counties occasional showers and thunderstorms are expected to continue throughout the season. The expected rainfall is likely to be below the long-term average amounts for the season (depressed rainfall). However, a few counties (Bungoma, Kakamega, Busia, Trans Nzoia and the extreme southern parts of West Pokot) are likely to experience near average with a tendency to below average rainfall. The peak of the season is expected in November. The expected rainfall is likely to be poorly distributed in both time and space.

2.1.2 Northwestern Counties (Turkana, and Samburu) are likely to experience mainly sunny and dry weather conditions for most of the season. However, showers and thunderstorms are likely to occur on a few days during the season. The expected rainfall amount is likely to be below the long-term average for the season (depressed rainfall). Long dry spells are also likely during the season.

2.1.3 Highlands East of the Rift Valley Counties (including Nairobi area): (Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Embu, Tharaka Nithi and Nairobi). These counties are likely to experience occasional rainfall during the season. Rainfall amounts are expected to be lower than the season's long-term average. Rainfall is expected to be unevenly distributed in time and space.

2.1.4 South-eastern Lowlands Counties (Kitui, Makueni, Machakos, Taita Taveta, and Kajiado): These counties are expected to experience occasional rainfall during the season. The expected rainfall amount is likely to be below the long-term average for the season. The rainfall is likely to be poorly distributed in both time and space.

2.1.5 North-Eastern Counties (Mandera, Marsabit, Wajir, Garissa and Isiolo): These areas are expected to experience mainly sunny and dry weather conditions and only a few days of rainfall. The expected rainfall amount is likely to be below the long-term average for the season, and it is likely to be poorly distributed in both time and space.

2.1.6 The Coastal Counties (Mombasa, Tana River, Kilifi, Lamu and Kwale): These counties are expected to receive occasional rainfall during the season. The expected rainfall is likely to be below the long-term average amounts for the season. It is likely to be poorly distributed in both time and space.

2.2. Temperature Forecast for October-December Season

The forecast indicates that warmer than average temperatures are likely over most parts of the country. There are enhanced probabilities for warmer than average temperatures in Eastern Kenya as shown in Figure 1b.

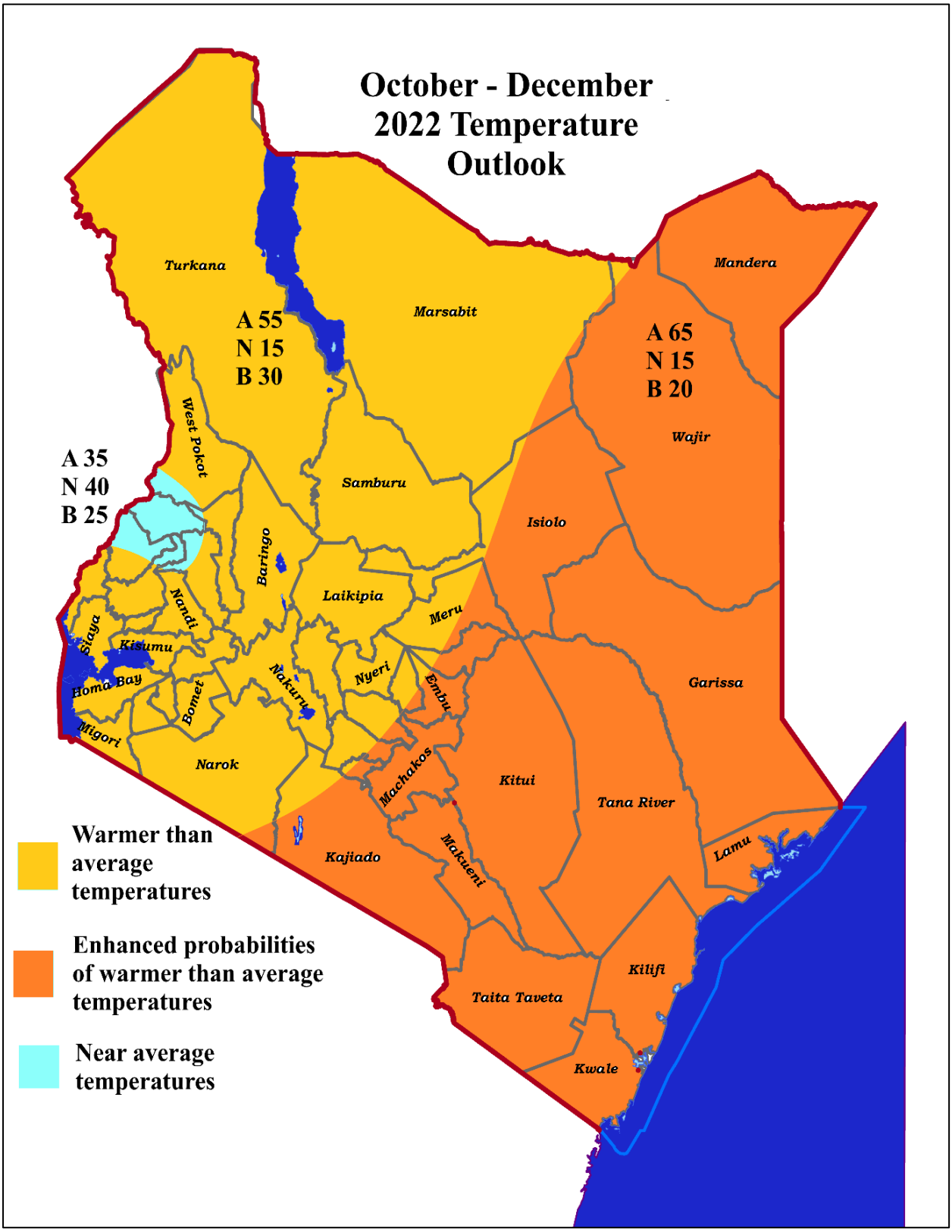

Fig. 1b: OND 2022 Temperature Forecast

3. Expected Distribution of The OND Rainfall, Onset and Cessation Dates

3.1 Distribution of the OND Rainfall

The OND 2022 rainfall is expected to be poorly distributed, both in time and space, during the onset month of October and the peak month of November.

3.2 Onset and Cessation Dates

The forecast indicates that most parts of the country are likely to have a late onset and an early cessation. This is especially pronounced over the Eastern Sector. Several parts of the Highlands West of the Rift Valley, the Lake Victoria Basin, the Central and parts of South Rift Valley will continue experiencing occasional rainfall in the month of September. The expected onset and cessation dates for the Counties are as indicated in ***Table 1*** and ***Figure 1c and 1d***.

Table 1a: Expected Onset and Cessation for the OND 2022 Rains

REGION	ONSET DATES	CESSATION DATES	DISTRIB-UTION
The Lake Victoria Basin, Highlands West of the Rift Valley and Central and South Rift Valley: (Siaya, Kisumu, Homa Bay, parts of Migori, Kisii, Nyamira, Trans Nzoia, Baringo, Uasin Gishu, Elgeyo Marakwet, parts of West Pokot, Nandi, Kericho, Kakamega, Vihiga, Bungoma, Busia, Laikipia, Nakuru):	September 2022	Fourth week of December, 2022 to first week of January, 2023	Poor to Fair
Southern Rift Valley (Narok)	Fourth week of October - first week of November, 2022	Rains to continue in January, 2023	Poor
Highlands East of the Rift Valley Counties (including Nairobi area): (Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Embu, Tharaka Nithi and Nairobi).	Fourth week of October - first week of November, 2022	Third to fourth week of December, 2022	Poor
South-eastern Lowlands Counties (Kitui, Makueni, Machakos Taita Taveta, and Kajiado):	First to second week of November, 2022	Third to fourth week of December, 2022	Poor
The Coastal Counties (Mombasa, Tana River, Kilifi, Lamu and Kwale):	Third to fourth week of November, 2022	Third to fourth week of December, 2022	Poor
Northwestern Counties (Turkana, parts of West Pokot, and Samburu)	Undefined	Undefined	Poor
North Eastern (Wajir, Marsabit, Garissa, Isiolo)	Undefined	Undefined	Poor

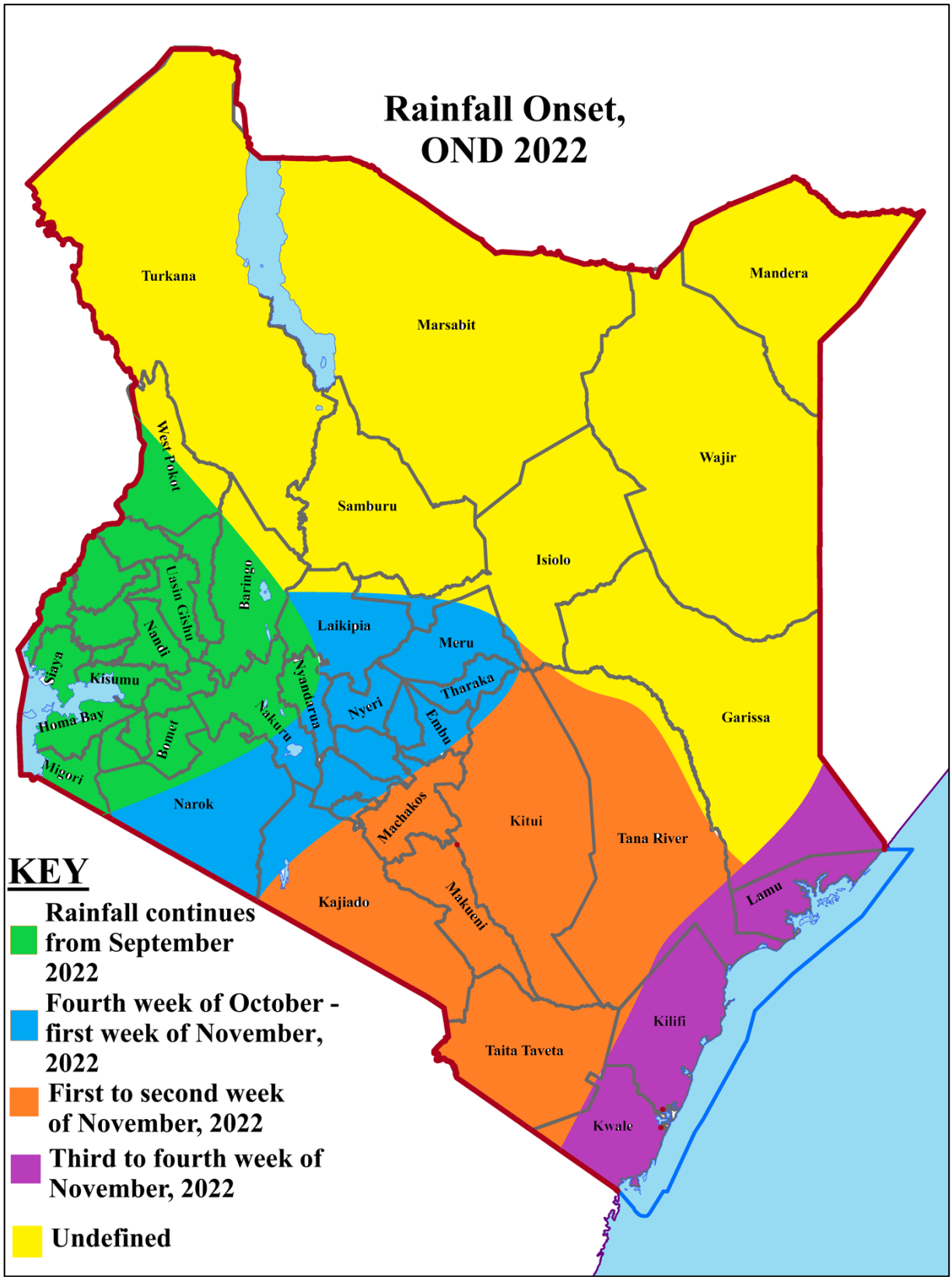

Figure 1c: Rainfall Onset, OND 2022

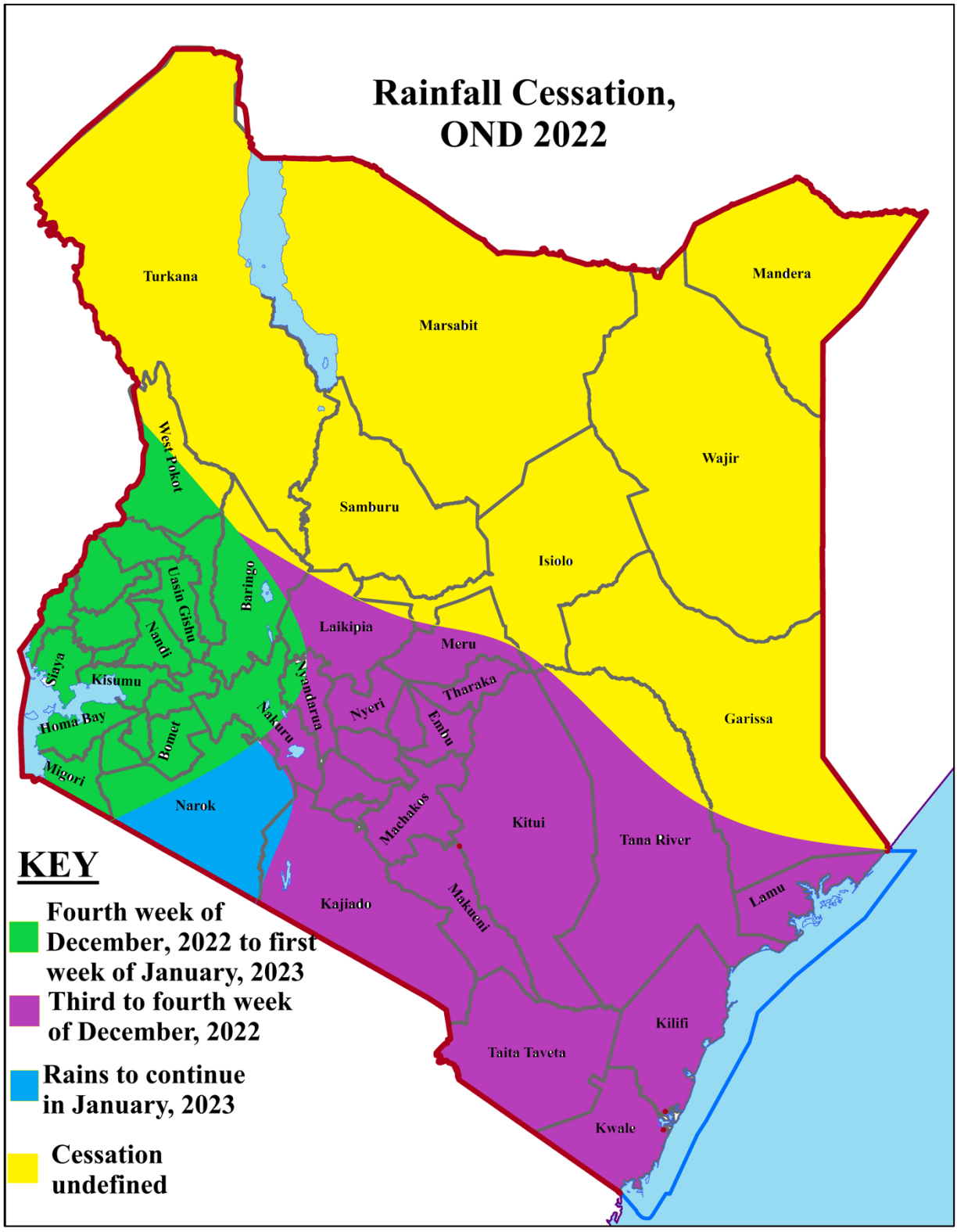

Figure 1d: Rainfall Cessation, OND 2022

4. Standardized Precipitation Index (SPI) forecast

In order to contextualize the impact of the expected rainfall deficit, the rainfall forecast has been expressed as standard deviations from the mean using the standard precipitation index (SPI). A probabilistic forecast of SPI can provide advance warning by indicating the chance of the various parts of the country either sliding into the alert or the alarm worsening phases of the national drought early warning system. The national drought early warning system uses SPI < -0.09 and SPI < -0.98 thresholds for the alert and alarm

worsening phases respectively. The forecast probabilities for the two scenarios are shown in **Figures 2a** and **2b**. Several counties are already in the alert and alarm drought phases. These counties are marked using circles (alert) and triangles (alarm) to further capture the likely deterioration of the prevailing drought.

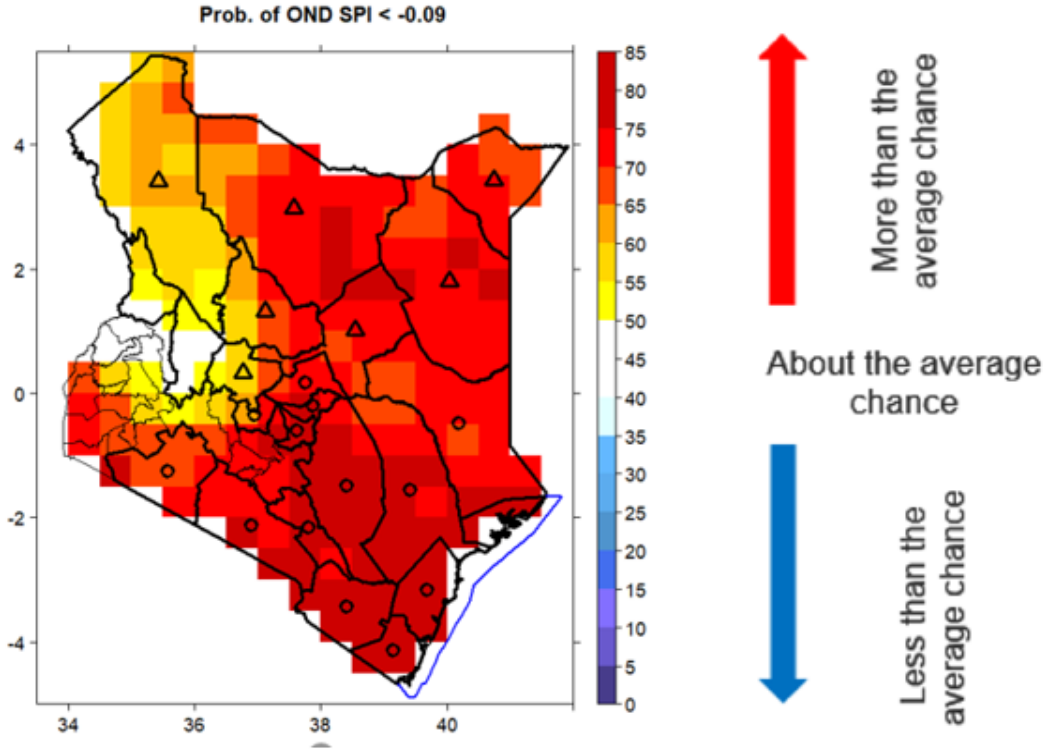

Fig. 2a: Probability of OND SPI<-0.09

The average chance of SPI<-0.09 is 46%. The probabilities exceed 70% over much of the country with the exception of a section of the western parts. This forecast shows that there is about 1.5 times the usual chance of the country sliding into the alert phase.

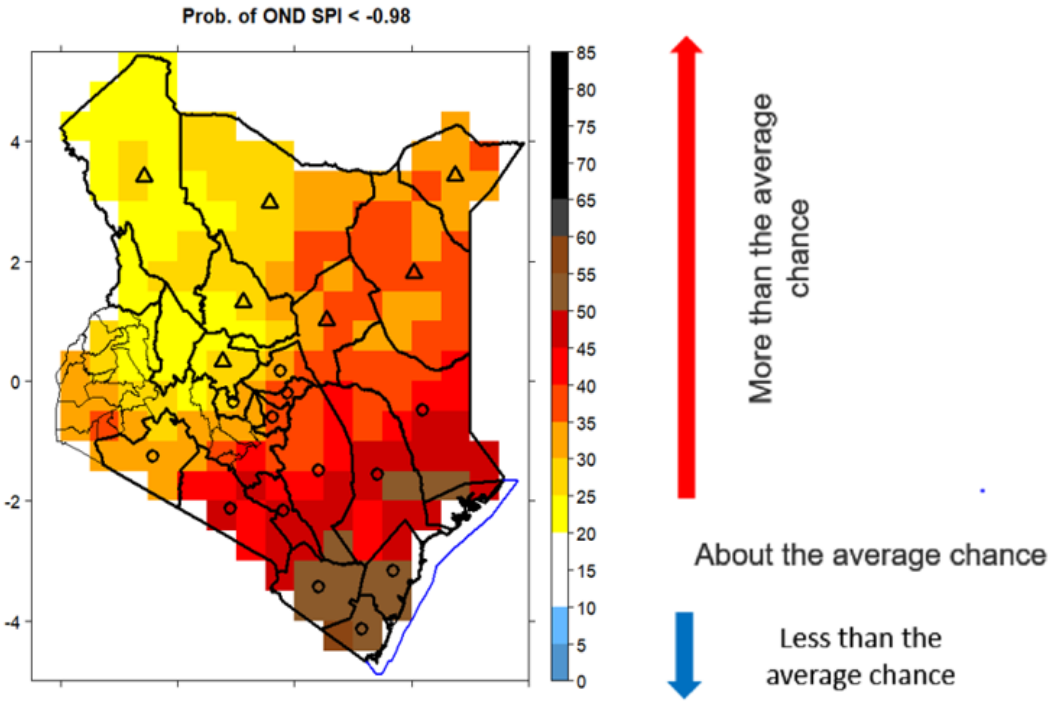

Figure 2b: Forecast probability of the country likely to get into the alarm worsening phase

The average chance of SPI<-0.98 is 16%. The forecast probabilities exceed 40% over the eastern sector of the country and are especially enhanced over the southeastern parts. This indicates that there is a high chance of most of the southeastern counties that are already in alert, sliding into the alarm worsening phase.

These forecasts show that the prevailing drought over the northern and eastern parts of country is likely to deteriorate and extend to other parts of the country.

5. POTENTIAL IMPACTS OF THE OND 2022 RAINS

Analysis of the rainfall performance for the past seasons MAM and JJA indicates that most parts of the country, especially the eastern and northern Kenya have experienced rainfall deficit. The forecasted depressed rainfall during the month of October to December indicates a likelihood of drought conditions that may worsen as the period progresses over most of the arid and semi-arid regions of northern and eastern Kenya. The most likely impacts on various sectors are highlighted in the following sections of this seasonal forecast.

5.1. Agriculture, Food Security and Livestock Development Sectors

The food security and nutrition situation in most parts of the country is likely to deteriorate. The expected late onsets, poor distribution and reduced amounts of rainfall is likely to negatively affect agricultural production, leading to poor yields of crop, livestock and fisheries especially in the Arid and Semiarid Lands (ASALs) areas in the Northern and Eastern parts and particularly in the Eastern sector where reliance on the "Short Rains" is high. Thus, food prices are expected to rise and accessibility to staple food is also expected to be poor. This will in turn lead to an increase in food deficits in these areas. Farmers are therefore advised to plant early maturing and drought resistant varieties of crops, fodder and pasture. The ministry of agriculture should advice on appropriate technologies, innovations and management practices.

The depressed rainfall expected in the ASAL areas will impact negatively on the availability of foliage and pasture in the pastoral areas of Northeastern, Northwestern, Coastal and Southeastern Kenya. The ongoing livestock offtake programs in these areas should therefore be enhanced to prevent further loss of livelihoods.

There is a likelihood of increase in crop pests such as fall army warms and animal diseases as livestock migrate in search of water and pasture. Therefore, integrated pests and disease surveillance, control and prevention should be enhanced.

5.2. Environment and Natural Resources Sectors

Forest and wildfires and their associated environmental consequences such as pollution and threats to biodiversity are expected to increase in areas expected to receive highly depressed rainfall. Thus, governments and communities are advised to promote fire management practices such as fire cut lines, firebreaks, early burning, putting in place firefighting gears and machinery as well as enhanced monitoring of fires.

Soil erosion is likely during periods of flash floods, as the ground is bare following prolonged periods of dry spells, especially in the ASAL regions. Plans should be put in place to enhance good agricultural practices to prevent soil erosion.

There is a likelihood of human wildlife conflicts, particularly in and around parks due to the limited resources such as water and forage. The relevant authorities are advised to provide forage and watering points to the wildlife to minimize such incidences.

Cases of deforestation and vegetation degradation are expected to increase as people look for alternative livelihoods, such as charcoal burning due to drought. There should be sufficient measures to promote livelihood diversification. It is also expected that forest regeneration will be poor, as a result of the poor rains. Therefore, the relevant authorities should consider appropriate measures in order to conserve and manage the existing forests.

5.3. Disaster Management Sector

The drought conditions over the Northern and Eastern parts of the country is expected to worsen and spread to other parts of the country. Relevant authorities are advised to

disseminate early warning information for anticipatory action to be taken as well as step up measures already being implemented to avert loss of lives, livestock and livelihoods. It is anticipated that there will be an increase in resource-based conflicts along the cross-border areas of the ASAL regions as pastoralists migrate in search of water, browse and pasture. Local authorities and leaders are urged to put in place conflict resolution mechanisms among their communities and encourage resource sharing.

There is a possibility of isolated storms that may cause floods in low lying areas and along rivers especially over the Southeastern lowlands, parts of the Highlands West of the Rift Valley and the Lake Victoria Basin. The public is advised not to walk through flooded waters or cross flooded rivers to avoid loss of lives.

In western Kenya, lightning strikes are highly probable, especially in Kisii, Kisumu, Nandi, Kakamega and Bungoma (Mt. Elgon areas) counties.

5.4. Health Sector

The scarcity of water due to the anticipated low rainfall is likely to lead to an upsurge in incidences of communicable diseases such as diarrhea, dysentery, amoebiasis as well as water washed diseases like trachoma, scabies, and other skin infections. An outbreak of Yellow fever is also likely to occur in the Ewaso Nyiro River Basin in Isiolo and some areas of Garissa County. Relevant authorities are urged to provide safe drinking water, treatment chemicals to populations that draw water from open sources, as well as promote public education on Water and Sanitation Hygiene (WASH). Vector borne diseases such as Chikungunya and dengue fever are expected to increase over the coastal region and parts of Northeastern Kenya while malaria is expected to increase over the Western parts of the country. Measures should be put in place to distribute insecticide treated nets in these areas to prevent the transmission of these diseases. Malnutrition related diseases are expected to increase over the Northern and Eastern sectors of the country, especially among the elderly, pregnant women and children. Thus, rapid vulnerability assessment should be carried out to identify the most vulnerable population and provide them with food relief and food supplements. There may be an increase in mental health cases as a result of displacement of people and loss of livelihoods. In addition to the measures highlighted, disease surveillance and reporting should be intensified in order for timely actions to be taken.

5.5. Transport and Public Safety Sector

The expected occasional flash floods may lead to destruction of transport systems, especially infrastructure in low-lying areas of Western Kenya, Tana River Basin and parts of Southeastern lowlands.

5.6. Water and Energy Sectors

Availability of water for domestic and livestock use is expected to continue deteriorating in the ASAL areas of Eastern and Northern parts of the country due to the expected depressed to highly depressed rainfall. Efficient water management and tracking should therefore be enhanced to ensure that the water needs of communities in these areas are met. Residents are also advised to practice rain water harvesting in order to supplement their water needs. The hydro power generating dams over the Eastern sector of the country are expected to register reduced inflow, thus negatively affecting power production. Careful reservoir management and continuous monitoring of water levels should be carried out in order to stabilize power production. Water pans over the ASAL areas are expected to dry up owing to the depressed

rainfall expected in these areas. Thus, the strategic boreholes in these areas should be activated to ensure water availability.

6. REVIEW OF THE WEATHER DURING MARCH-MAY (LONG-RAINS) 2022 AND JUNE-JULY-AUGUST JJA 2022 SEASONS

6.1. March-May (Long-Rains) 2022

An assessment of the rainfall recorded from 1st March to 31st May 2022 indicates that the rainfall performance was below average over most parts of the country. Kisumu, Moyale, Nakuru, Narok, Kisii, Eldoret, Kericho and Lamu are the only stations that recorded near average rainfall. All the other stations recorded rainfall that was below 75% of their MAM LTMs (depressed rainfall).

The distribution, both in time and space, was generally poor over most parts of the country. The month of March was characterized by mainly dry weather conditions. Depressed rainfall was recorded during the month over most parts of the country except in Moyale, Kisumu, Voi and Laikipia where near average rainfall was recorded. In April and May, most stations recorded near to below average rainfall, except in Moyale and Wajir where above average rainfall was experienced in April and May respectively. Lodwar and Mandera recorded less than 20% of their MAM LTMs.

During MAM 2022, no station recorded above average rainfall. Kisumu, Moyale, Nakuru, Narok, Kisii, Eldoret, Kericho and Lamu are the only stations that recorded near average rainfall at 99.9%, 93.4%, 84.2%, 83.1%, 82.2%, 79.1%, 77.3%, and 75.8% respectively. All the other stations recorded rainfall that was below 75% of their MAM LTMs (depressed rainfall). The highest seasonal rainfall total of 584.4mm was recorded at Kisii Meteorological station, followed by Kisumu at 540.9mm. Other stations that recorded high amounts of rainfall include Kakamega (520.1mm), Kericho (514.0mm), Embu (373.4mm), Lamu (327.7mm), Kitale (325.7mm), Mombasa (321.9mm), Dagoretti (321.6mm) and Thika (306.3mm). All the other stations recorded rainfall that was less than 300mm with Mandera recording the lowest amount of rainfall at 11.9mm throughout the season.

Figure 3a and 3b show the amount of rainfall recorded during the MAM 2022 season (Blue bars) up to 31st May 2022 as compared to the MAM seasonal LTMs (Red bars). Figure 3c shows the MAM 2022 seasonal rainfall performance as a percentage of the LTMs.

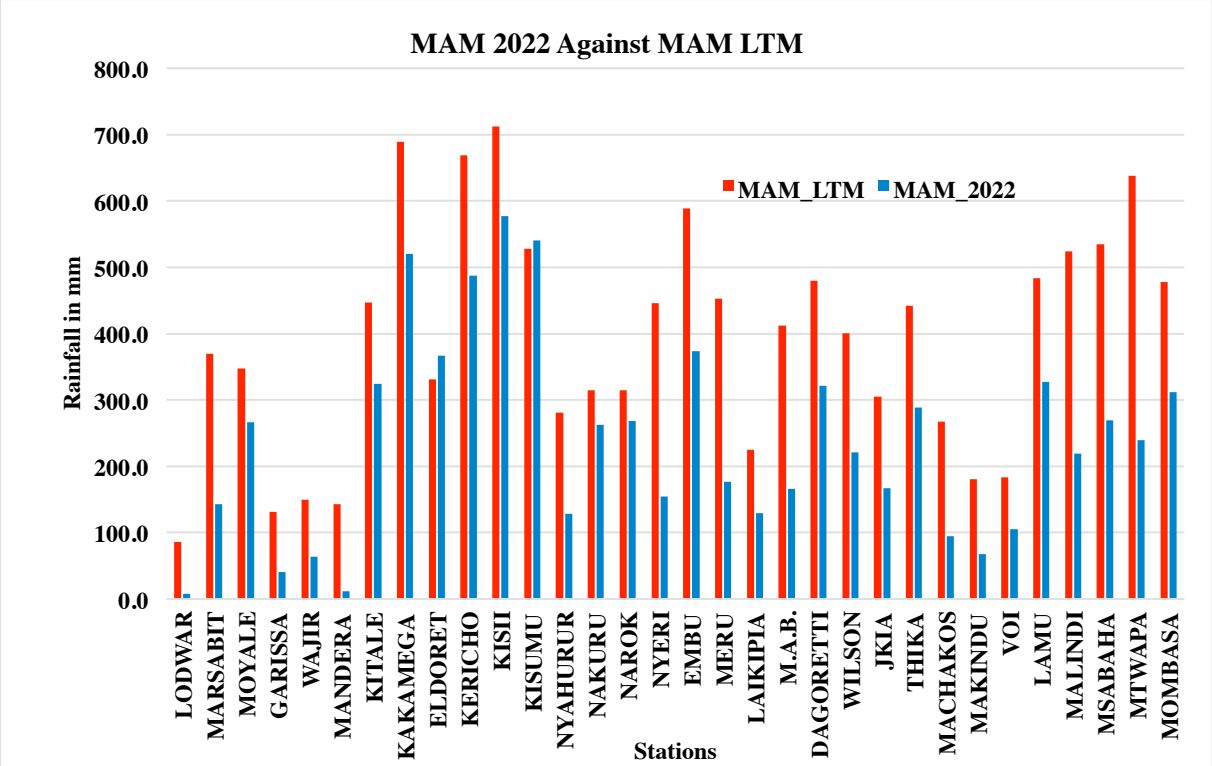

Figure 3a: MAM 2022 season (Blue bars) as compared to the MAM seasonal LTMs (Red bars)

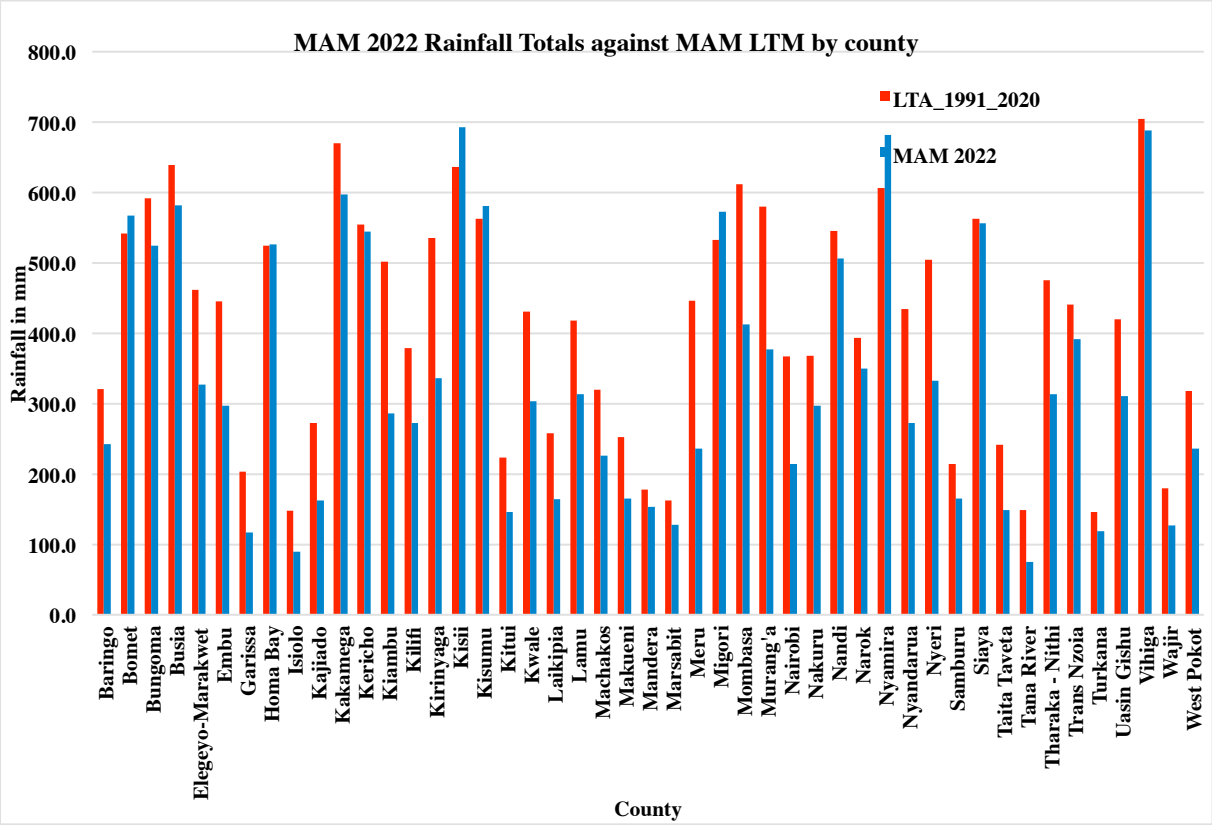

Figure 3b: MAM 2022 Rainfall Totals against MAM LTM by county (Chirps data)

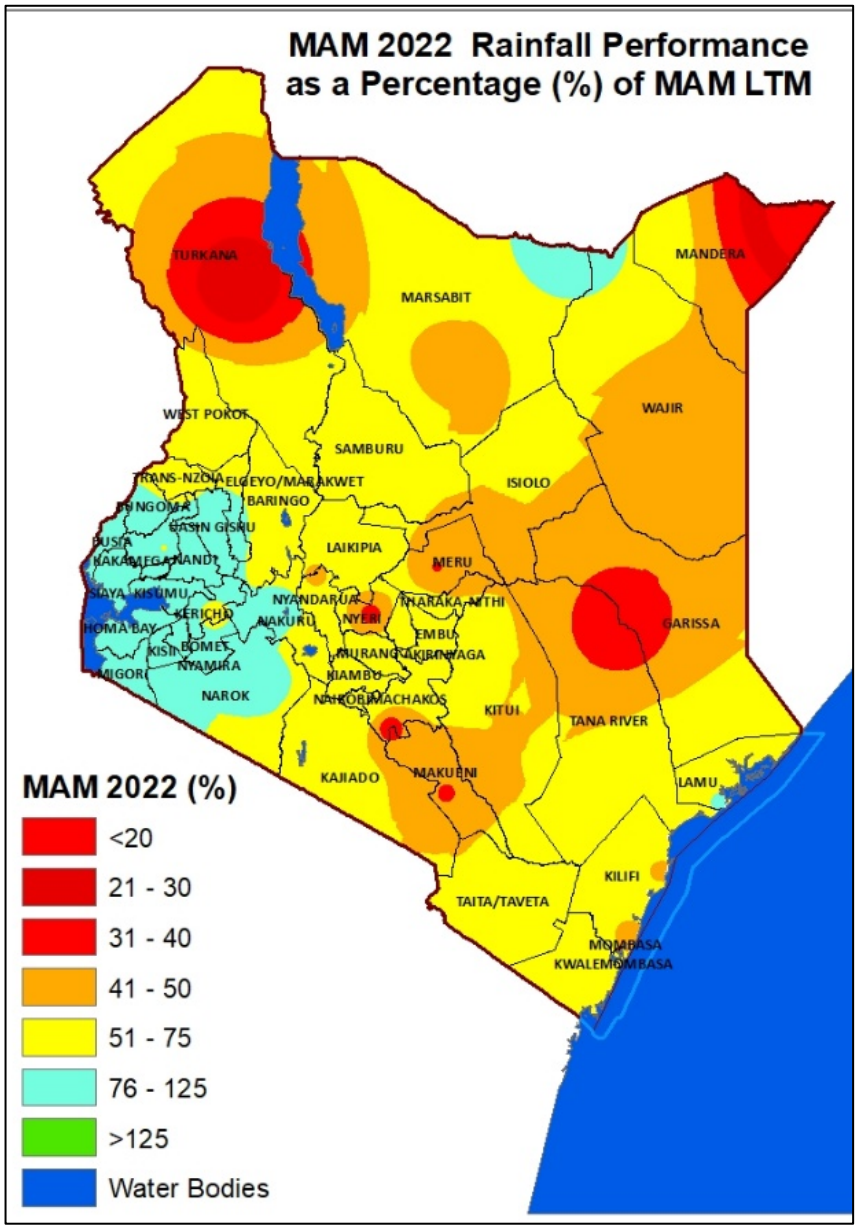

Figure 3c. MAM 2022 seasonal rainfall performance as a percentage of the LTMs.

6.2. JUNE-JULY-AUGUST JJA 2022

6.2.1. June-July-August JJA 2022 Rainfall Review

Several parts of the country experienced dry weather conditions. However, the western sector of the country, the coastal region and a few areas over the Highlands East of the rainfall experienced rainfall during June-July-August (JJA) 2022. Near to above average rainfall was recorded over several parts of the Highlands West of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley. Kericho, Kisii, Kitale and Narok are the only stations over the western sector that recorded below average rainfall. Near average rainfall was recorded over the coastal region while Near to below average rainfall was recorded over the Highlands East of Rift Valley including Nairobi County. Occasional cool and cloudy conditions were observed over the Highlands East of the Rift Valley including Nairobi County as well as some parts of the southeastern lowlands, Central and southern Rift Valley during the season. The Northwest, Northeast and the Southeastern lowlands remained generally dry during the season.

The highest seasonal rainfall total of 667.1 (149.6% of JJA LTM) was recorded in Eldoret Meteorological station. This was followed by Kakamega station that recorded 441.6mm (82.6%). Other stations that recorded high amounts of rainfall include Kericho (355.8mm), Lamu (318.1mm), Kisii (315.2mm), Mtwapa (307.8mm), Kisumu (303.1mm), Malindi (272.2mm), Kitale (263.2mm), Nyahururu (258.2mm), Msabaha (243.3mm), Mombasa (230.4mm), Nakuru (219.3mm) and Embu (128.0mm). The rest of the stations recorded rainfall that was less than 100mm of rainfall with Machakos recording the lowest amount of rainfall at 1mm.

Figures 4a and 4b shows the JJA 2022 Rainfall Totals (in blue bars) as compared to JJA LTMs (in red bars).

Rainfall as % of LTM / Range	Description
< 75%	Below Normal (Depressed) rainfall
75% and 125%	Near normal rainfall
> 125%	Above Normal (Enhanced) rainfall

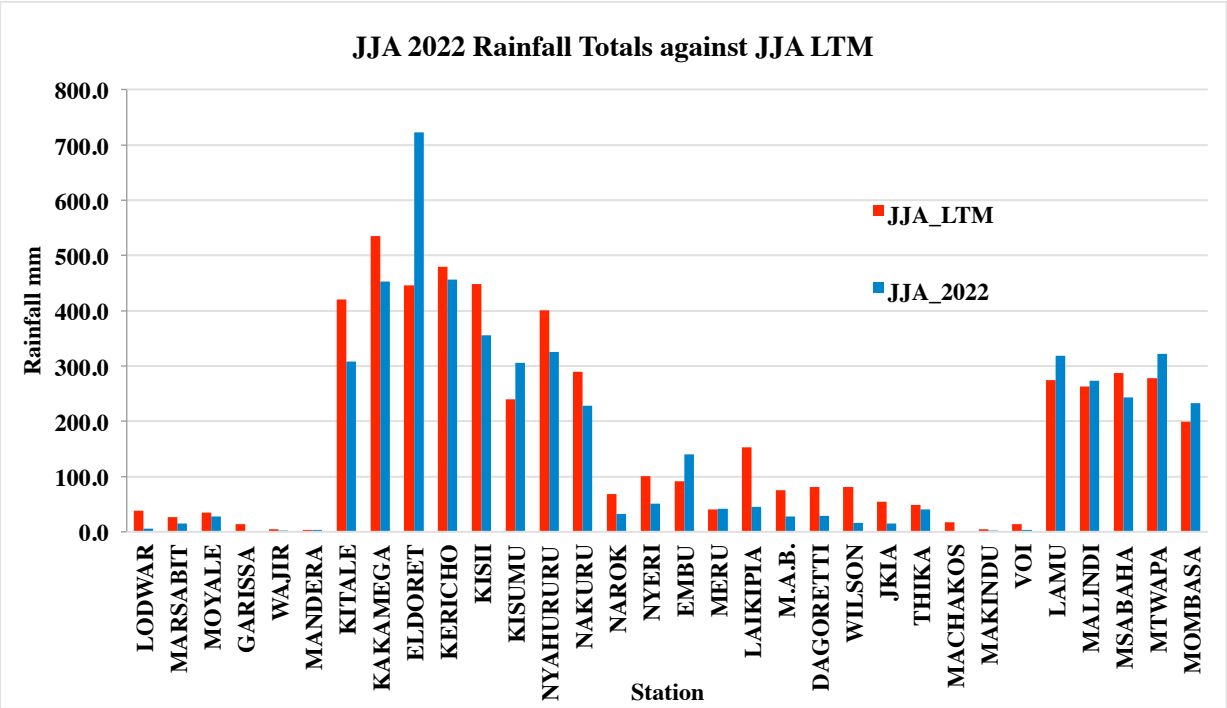

Figure 4a: JJA 2022 Rainfall Totals against JJA LTM

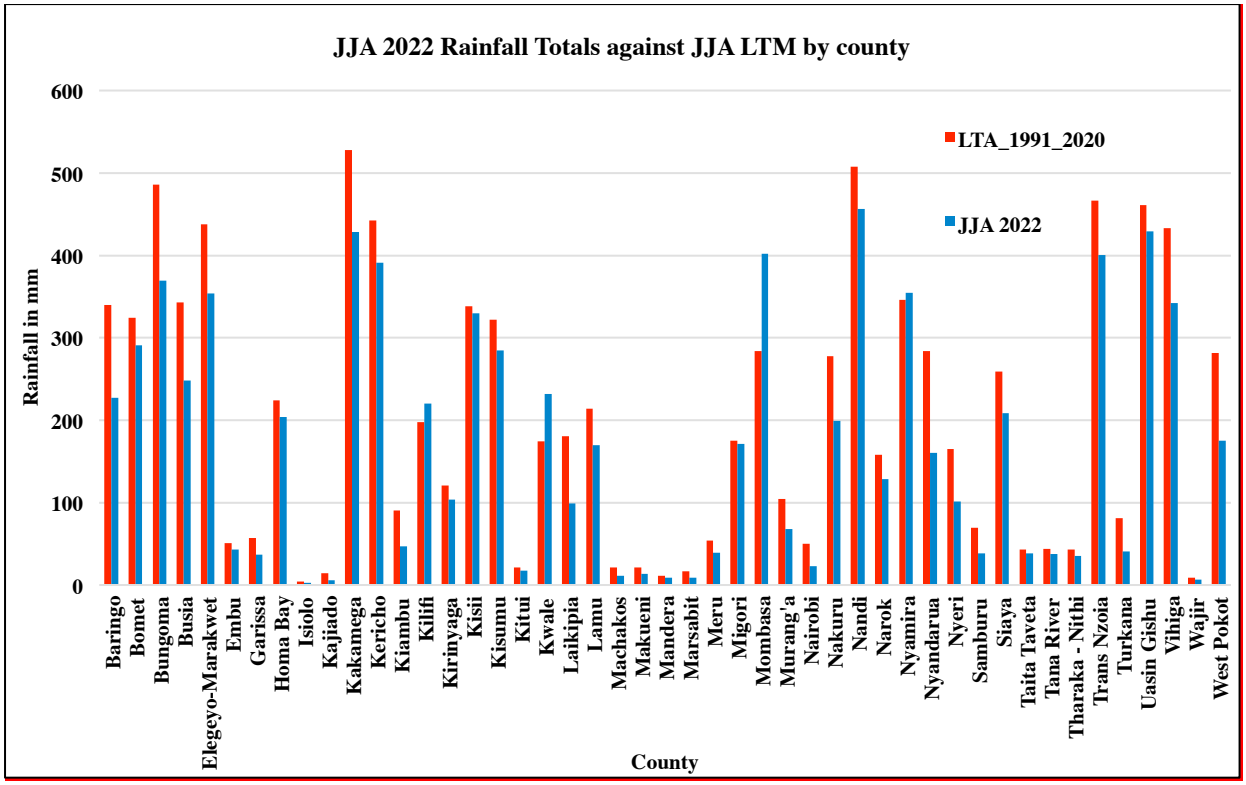

Figure 4b: JJA 2022 Rainfall Totals against JJA LTM by county

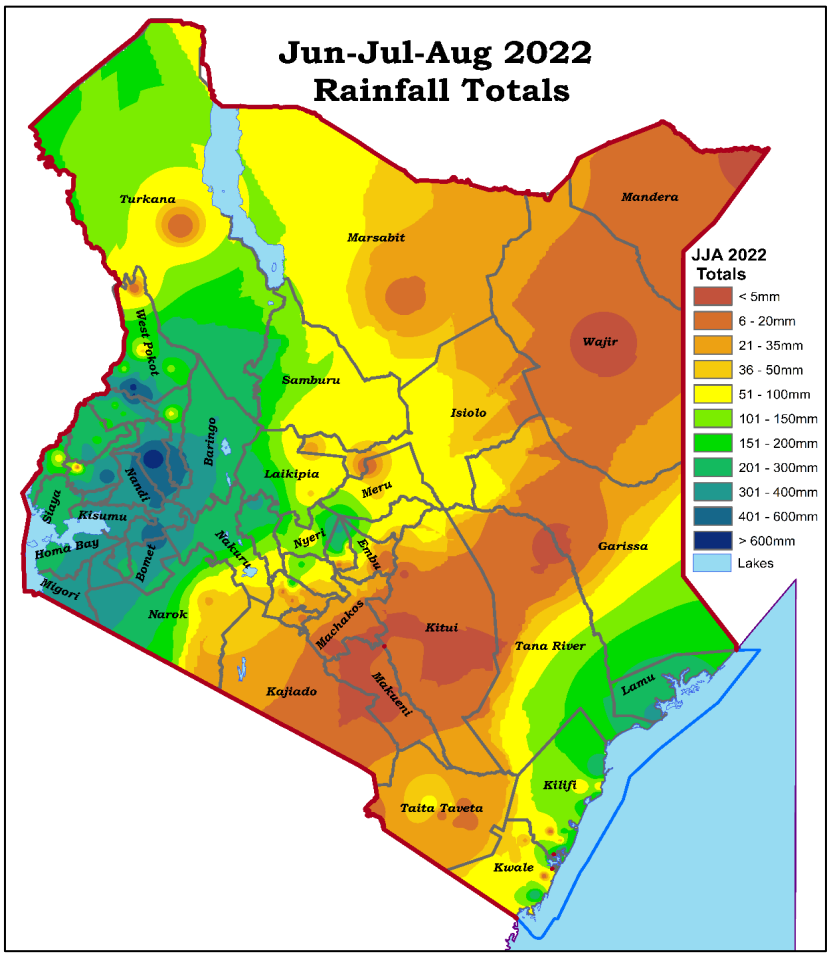

Figure 4c: JJA 2022 Rainfall Totals

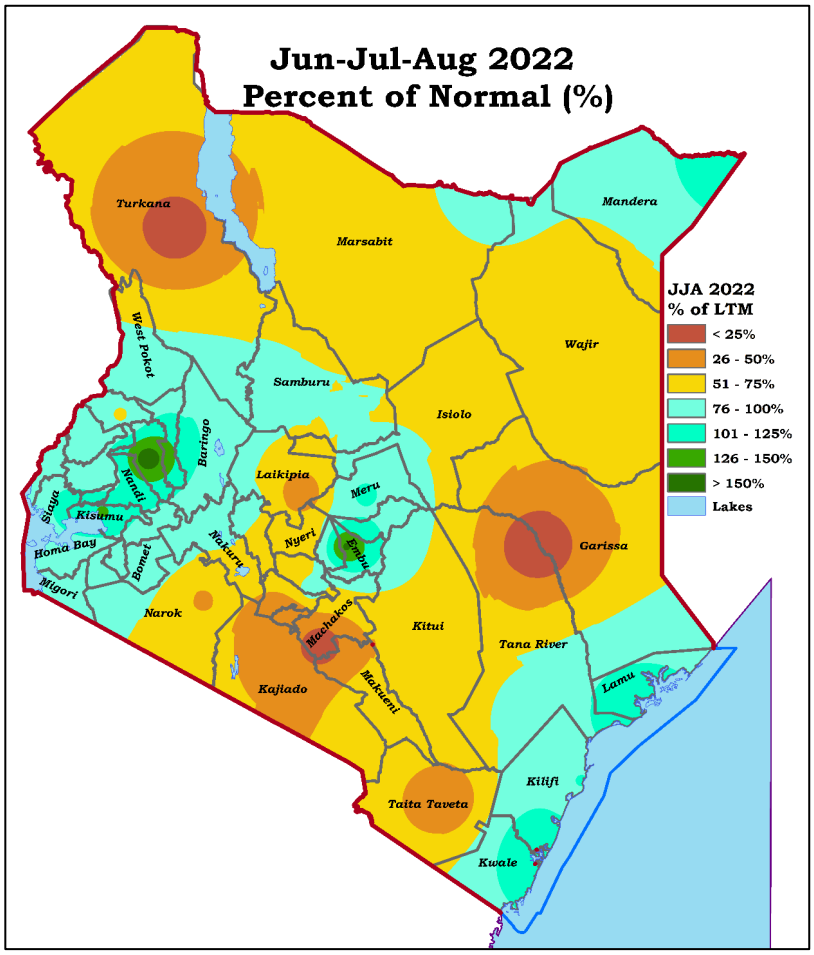

Figure 4c: JJA 2022 Percent of Normal

6.2.2. June-July-August JJA 2022 Temperature Review

Analysis of the JJA 2022 mean temperatures indicates that temperatures were generally warmer than average over most parts of the country. However, the daytime (maximum) temperatures in the Central highlands, Nairobi area and Isolated areas over the Southeastern lowlands (Ngong) occasionally fell below 18°C and they were cooler than average over most places in July. **Figure 5a** shows the JJA 2022 mean temperatures anomalies while **Figure 5b** shows the JJA 2022 mean temperatures against JJA LTMs.

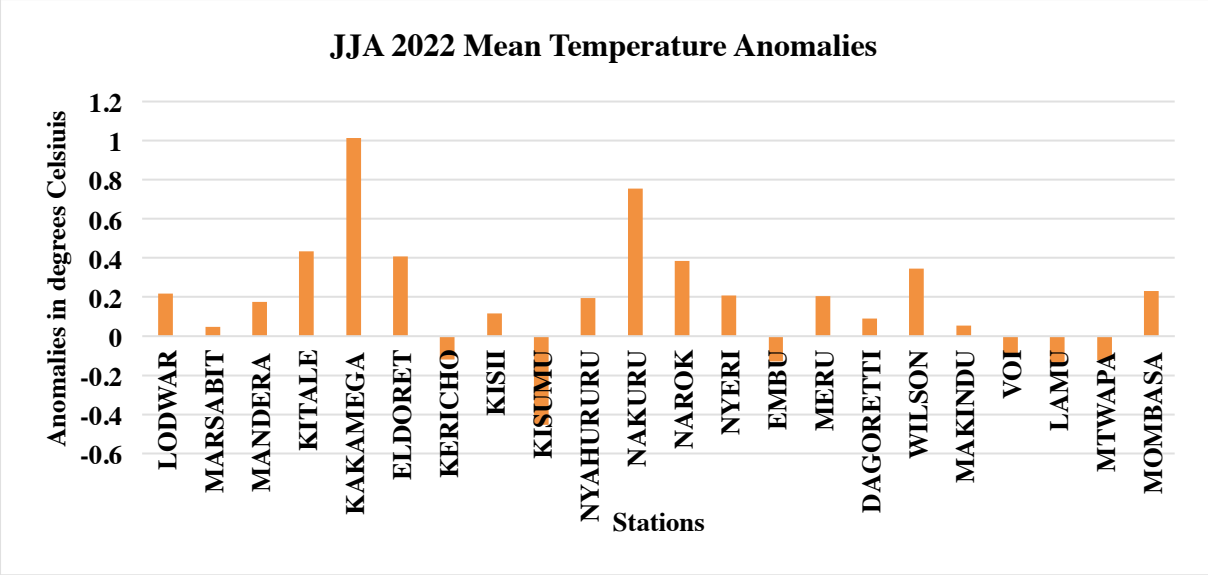

Figure 5a: JJA 2022 Mean Temperature Anomalies

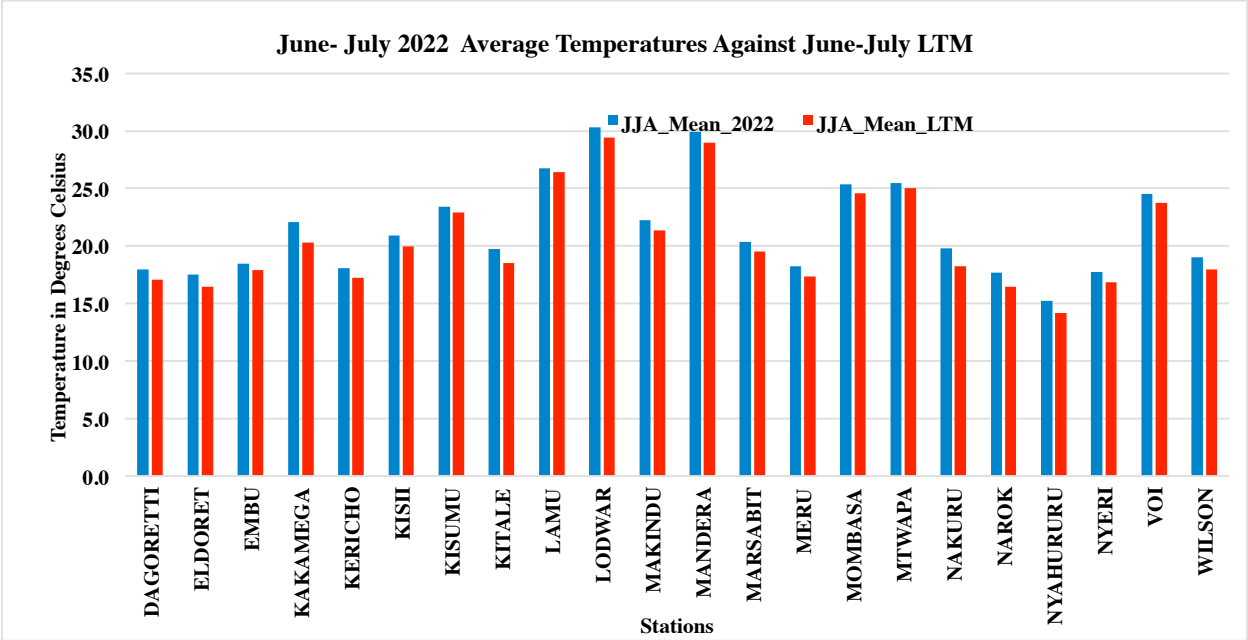

Figure 5b: June- August 2022 Average Temperatures Against June-July LTM

6.1 EXPERIENCED IMPACTS IN THE MAM AND JJA 2022 SEASONS

6.1.1 Agriculture and Food Security Sector

The long-delayed onset, the long dry spells and the overall poor performance experienced during the MAM season over the northern sector led to reduced pasture for livestock among the pastoralist communities. This had a serious impact on the staple foods such as maize, beans, potatoes and vegetables. Farmers also lost inputs such as fertilizer and labor costs.

During the season, there were reports of livestock deaths in Mandera, Marsabit and Turkana Counties. There were reports of crop failure in the Highlands west of the Rift valley.

During the **JJA** season, the prolonged dry conditions over the ASAL regions resulted in insufficient pasture and water for livestock, as well as reduced food and water for human consumption. There were cases of crop failure and food shortage in Lamu, Kilifi and Marsabit

Counties. There were also cases of livestock death in Marsabit, Kilifi and Wajir Counties. Press reports indicate that in Lamu County, over 2000 people faced starvation, over 9000 people needed treatment for malnutrition in Marsabit County while more than 200,000 people in Kilifi County had to survive on one meal a day.

6.1.2 Disaster Management Sector

Drought has affected more than 20 ASAL counties where over 2.4 million people in these areas are in dire need of food aid.

During the **JJA** season, five people lost their lives when they were swept by flood waters in Baringo and West Pokot counties.

Strong winds of more than 25 knots were reported over the coast, northeast and parts of the southeastern lowlands. These winds caused structural damage to houses in Kilifi County.

6.1.3 Transport and Public Safety

During the **JJA** season, fog occurrence was reported along the Nairobi Nakuru highway, over several counties in the Highlands East of the Rift Valley and over a few counties in Northeast. Meru, Marsabit and Nyeri stations reported between five to eight consecutive hours of fog on diverse dates in the months of June, July and August.

6.1.4 Water Resources Management and the Energy Sectors

During the **MAM** season, some rivers including the Mara, Tana and Ewaso Nyiro and several streams across the country had reduced water flow due to depressed rainfall experienced in the catchment areas. This caused disruption of water supply services especially in the ASALs for example, about 70-90% of water pans have dried up in Isiolo, Wajir and pastoral areas of Garissa and Tana River. Below normal inflows were recorded in the hydropower plants in the eastern part of Kenya while near normal inflows were recorded in the hydropower plants in the western part of Kenya. Turkwel dam levels remained high.

During the **JJA** season, the near average to below average rainfall received in June, July and August over the Lake Victoria Basin led to a drop in Lake levels. Reservoir water levels over the eastern sector of the country have been falling steadily as a result of depressed rainfall over the catchment areas, leading to reduced hydro power production.

6.1.5 Environment

During the **MAM** season, the occasional rainfall in the Lake Victoria basin, Highlands West of the Rift Valley and Highlands East of the Rift Valley provided sufficient moisture to sustain vegetation growth.

During the **JJA** season, the Ministry of Environment and Forestry took advantage of the forecast to plant and grow trees in Elgeyo Marakwet County and other parts of the country.

The prolonged drought in ASAL areas led to reduction of water and forage for wildlife, degradation of habitats, wildlife migration and human wildlife conflicts. There was an increase in the number of fire incidents in Tsavo West and Chyulu conservation areas.

The strong winds reported over the Coast, Northeast and parts of the southeastern lowlands limited air security patrols in protected areas.

NB: This outlook should be used together with the 24-hour, 5-day, 7day, monthly, special forecasts and regular updates/advisories issued by this Department as well as Weekly and Monthly County forecasts developed and availed by County Meteorological Offices.

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