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THE WEATHER OUTLOOK FOR SEPTEMBER 2022 AND WEATHER REVIEW FOR AUGUST 2022

1 HIGHLIGHTS

1.1 The outlook for September 2022

The forecast for September 2022 indicates that several parts of the country will continue to experience mainly sunny and dry weather. The Lake Victoria Basin, the Highlands West of the Rift Valley, and the Central and Southern Rift Valley, are likely to receive above-average rainfall. The Coastal Strip is likely to experience occasional light morning showers while the Highlands East of the Rift Valley (including Nairobi County) is likely to experience afternoon showers and cloudy conditions in the mornings, especially during the first half of the month.

1.2 The Weather Review for August 2022

The Lake Victoria Basin, the Highlands West of the Rift Valley, the Central and South Rift Valley, and the Highlands East of the Rift Valley all experienced near to above average rainfall during the month of August. Only Kakamega and Narok stations over the western sector recorded rainfall that was below average. With the exception of Mombasa and Mtwapa, all the other coastal stations recorded below average rainfall. Nairobi, the northeastern, northwest, and much of the southeastern lowlands all experienced dry weather. The mean temperatures were generally lower than average at most stations except at Wilson Airport and Lamu, where normal temperatures were recorded, and at Kakamega, Eldoret, Nyahururu, Nakuru, and Eldoret, where temperatures were warmer than average.

2. THE WEATHER FORECAST FOR SEPTEMBER 2022

The rainfall forecast for September 2022 is based on the observed patterns of the Global Sea Surface Temperatures (SSTs) especially over the Indian and Pacific Oceans. The below average SSTs in the Western Equatorial Indian Ocean (adjacent to the East African Coast), the warmer than average SSTs in the Eastern Equatorial Indian Ocean (adjacent to Australia) and also the below average SSTs across most of the equatorial Pacific Ocean were taken into account. This constitutes a

negative Indian Ocean Dipole and La Niña Conditions respectively. **Figure 1a** shows the rainfall climatology in September.

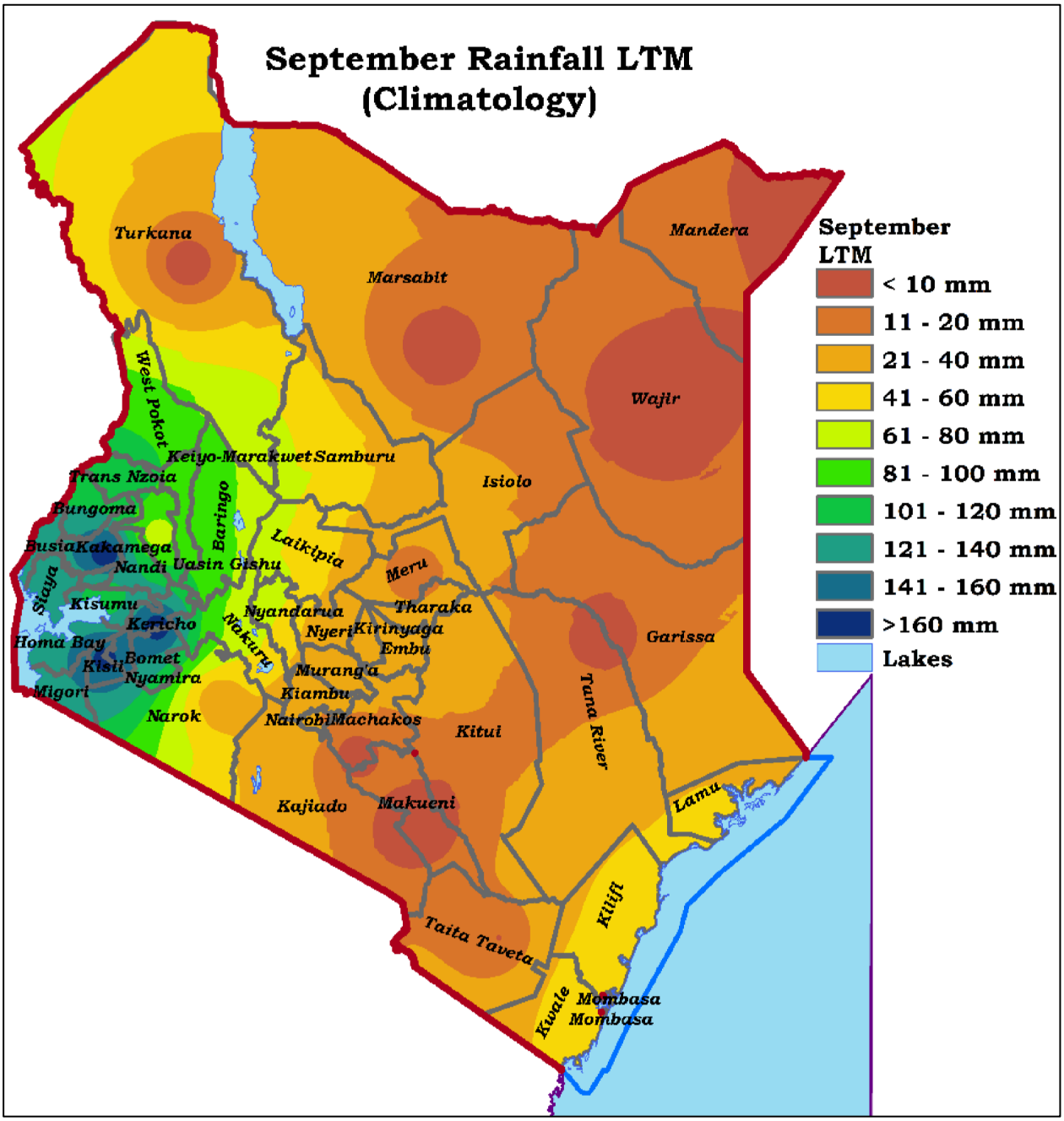

Fig. 1a: September Long Term Rainfall (Climatology)

2.1. Rainfall Forecast for September 2022

It is expected that several parts of the country will be generally dry for most of the month of September. However, above average rainfall is likely to be experienced over the Lake Victoria Basin, the Highlands West of the Rift Valley and Central Rift Valley. Near average rainfall is

expected over some parts of the Highlands East of the Rift Valley including Nairobi County as depicted by **Figure 1b.**

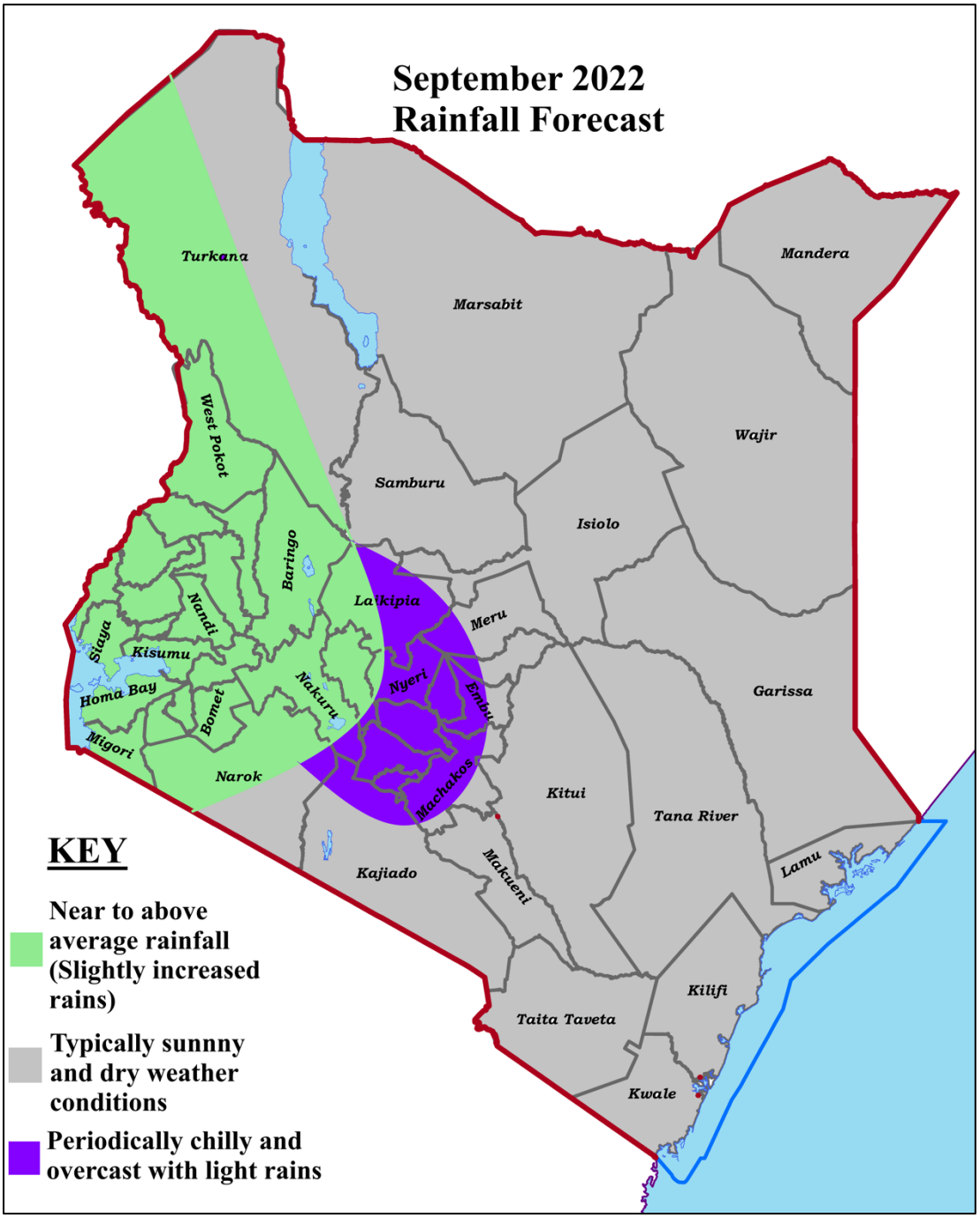

Figure 1b: September 2022 Rainfall Forecast

2.2 Specific Outlook for particular areas

2.2.1 The Highlands West of the Rift Valley (Trans Nzoia, Nandi, Kericho, Uasin Gishu, Elgeyo-Marakwet, West Pokot, Kakamega, Vihiga, Bungoma, Kisii, Nyamira counties); the **Lake Victoria Basin:** (Kisumu, Homa Bay, Migori, Siaya, Busia counties)**; the Central Rift**

Valley (Nakuru, Baringo, Laikipia counties) and **the Southern Rift Valley** (Bomet, and parts of Narok counties) are likely to experience above average rainfall, which will be characterized by occasional showers and thunderstorms during the month.

2.2.2 Northwestern Kenya (Turkana and Samburu counties) are likely to experience sunny and dry weather conditions throughout the month. However, areas bordering Uganda and Southern Sudan are likely to experience occasional rainfall during the month. The expected total rainfall amount over these areas is likely to be near to above the long-term average amounts for September**.**

2.2.3 The Highlands East of the Rift Valley (Nyeri, Murang'a, Kiambu, Kirinyaga, Nyandarua, Embu, Meru and Tharaka-Nithi counties); Nairobi County; are likely to experience sunny and dry weather conditions for most of the month. However, occasional afternoon and evening showers and cloudy conditions in the mornings are likely, especially during the first half of the month. The expected total rainfall amount is likely to be near to above the long-term average for September.

2.2.4 The Coast (Lamu, Kilifi, Mombasa, Kwale and Tana River counties) are likely to experience generally dry weather conditions with occasional light morning showers. The expected total rainfall amount is likely to be near to below the long-term average for the month of September.

2.2.5 The Southeastern Lowlands (Machakos, Makueni, Kitui, Kajiado and Taita Taveta counties) are likely to experience generally sunny and dry weather conditions throughout the month.

2.2.6 Northeastern Kenya (Marsabit, Isiolo, Wajir, Mandera, and Garissa counties) are likely to experience generally sunny and dry weather conditions throughout the month. Strong southerly winds of more than 25 knots are expected during the month.

2.3 POTENTIAL IMPACTS

The following are the likely impacts during the month of September:

2.3.1 Agriculture and Food Security

The continuation of sunny and dry weather conditions in the Northeastern, Northwestern, and parts of the Southeastern lowlands is expected to further reduce the availability of food, water, pasture, and browse for human and livestock consumption. Relevant authorities are therefore advised to keep a close eye on the situation in order to avoid any loss of life or livestock. Livestock farmers should also destock their herds. Plans should also be put in place to provide water, food, and food supplements to the community's most vulnerable members.

Rainfall in the Highlands West of the Rift Valley, Central and South Rift Valley is expected to continue, providing enough soil moisture to sustain agricultural production. The rainfall is, however, likely to interfere with crop harvesting over these regions.

2.3.2 Disaster Management

The ongoing drought in the Arid and Semi Arid Lands (ASAL) of the country's northern and eastern sectors is expected to worsen. This may lead to an increase in resource-based conflicts, particularly over water and pasture, among livestock communities. It is recommended that the Government and humanitarian organizations step up the measures that are already in place to prevent the loss of lives, livelihoods, and livestock. Community leaders are urged to promote resource sharing as well as peace in their respective communities.

Throughout the month, strong southerly winds of up to 25 knots are expected over the Northeastern counties of Garissa, Mandera, Marsabit, and Wajir. Residents of the affected areas are advised to be cautious of the winds as they are likely to carry huge amounts of dust.

2.3.3 Water Resources Management and Energy

Water availability for both human and livestock use is expected to decline further in the ASAL areas of the country's northern and eastern sectors. Water management and tracking should be improved to ensure that adequate water resources are available for human and livestock needs in these areas.

Because of the expected dry weather conditions, water levels in hydroelectric power generating dams in the Highlands East of the Rift Valley are expected to remain low during this period. This may have an impact on hydroelectric power generation. To stabilize power production, careful reservoir management and continuous monitoring of water levels is required.

2.3.4 Health

Water scarcity in ASAL areas may result in communicable diseases like diarrhea, dysentery, and cholera. Plans should be developed to provide safe drinking water as well as water treatment chemicals to communities that rely on open sources of water.

Nutrition-related diseases are likely to become more prevalent in ASAL areas. Rapid vulnerability assessments should therefore be carried out in order to identify the most vulnerable populations and provide relief food to them.

As a result of the strong winds and dry weather conditions that may lead to dust storms, there may be an increase in respiratory tract diseases over Northeastern Kenya.

2.3.5 Environment

Conflicts between people and wildlife could result from the ASAL regions' scarcity of resources. To reduce such occurrences, the relevant authorities are urged to provide foraging areas and watering facilities for wildlife.

The predicted dry weather could increase incidences of forest fires. In this regard, necessary protective steps should be taken by the appropriate authorities in the forestry sector.

It is anticipated that the rainfall expected over the Highlands West of the Rift Valley, Lake Victoria Basin, Central, and Southern Rift Valley will keep the soil moist, which is good for tree growth. Therefore, it is advised that people make use of this and plant trees while also observing environmental protection measures.

3 REVIEW OF THE WEATHER DURING AUGUST 2022

3.1 Rainfall Review in August 2022

During the month of August, rainfall was recorded over the Lake Victoria Basin, the Highlands West of the Rift Valley, the Central and South Rift Valley and a few areas over the Coast, the Highlands East of the Rift Valley and Southeastern lowlands (Shigharo and Wundanyi). Dry weather conditions were recorded over Nairobi, Northeastern, Northwestern and most of the Southeastern lowlands, where most Meteorological stations recorded monthly rainfall totals of less than 20mm. The month was characterized by isolated storms over the western sector of the country. For instance, Eldoret Meteorological station recorded 92.8mm in 24 hours on 14th August 2022. On the same day, Nasukuta station in West Pokot recorded 53.3mm. On 1st August 2022, Koitogos farm in Kitale recorded 61.0mm while WRA Kapenguria and ADC Olngatongo recorded 52.2mm and 48.0 mm respectively. Suam orchards in Kitale recorded 48.0mm on 16th August.

The rainfall amounts recorded over the Lake Victoria Basin, the Highlands West of the Rift Valley, the Central and South Rift Valley and the Highlands East of the Rift Valley were near to above average, compared with their August monthly LTMs, except over Kakamega and Narok where below average rainfall was recorded. Most stations over the Coast recorded below average rainfall, except Mombasa and Mtwapa that recorded near average rainfall. The highest monthly rainfall total of 344.0mm was recorded in Kaibos Mixed Secondary School, followed by Eldoret Airport with 342.6mm. Other stations that recorded high amounts of rainfall include Eldoret Meteorological station (339.5mm), Kapkatet (309.2mm), Kericho (295.3mm), WRA Kapenguria (257.0mm), Kitale 190.0mm), Nyamira D.Os office (189.3mm), ADC Olgatongo (189.2mm), Nasukuta (188.9mm), WRA Kitale (185.4mm), Kainuk secondary school (178.5mm), Koitogos farm Kitale (169.0mm), ADC Sabwani (167.1mm) and Elgon Downs (161.1mm). The rest of the stations recorded less than 160mm of rainfall with Garissa, Wajir and Mandera recording no rainfall at all throughout the month as shown in **Figures 2a** and **Figure 2b** below.

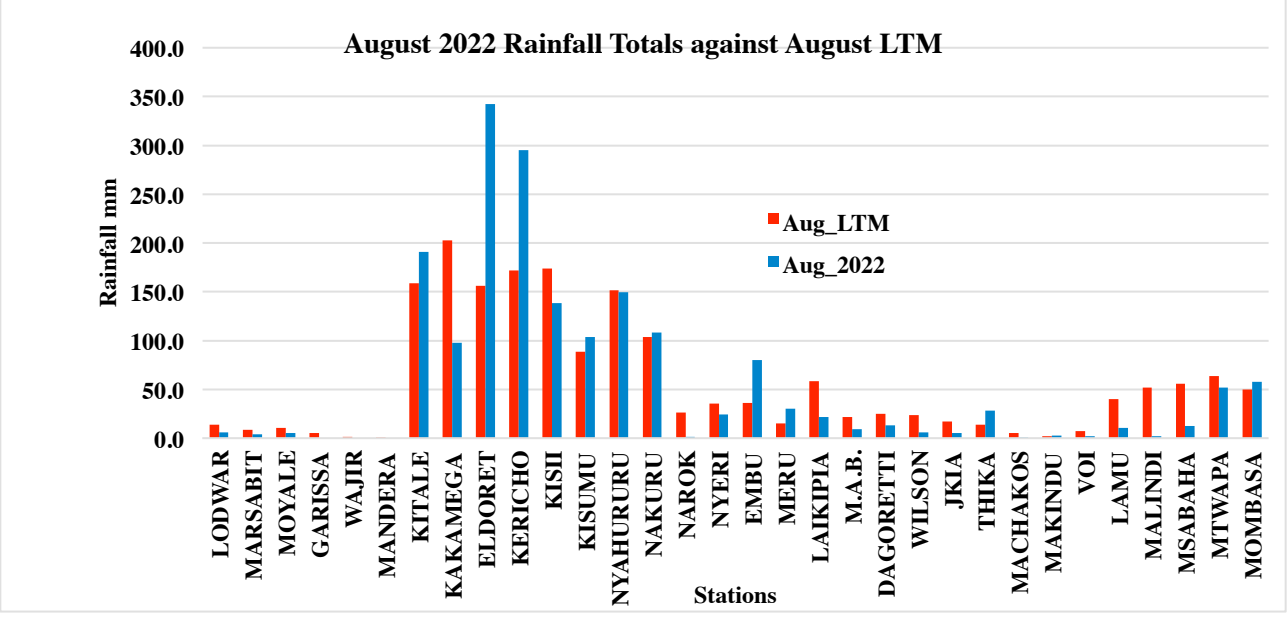

Figure 2a: August 2022 Rainfall Totals against August LTM

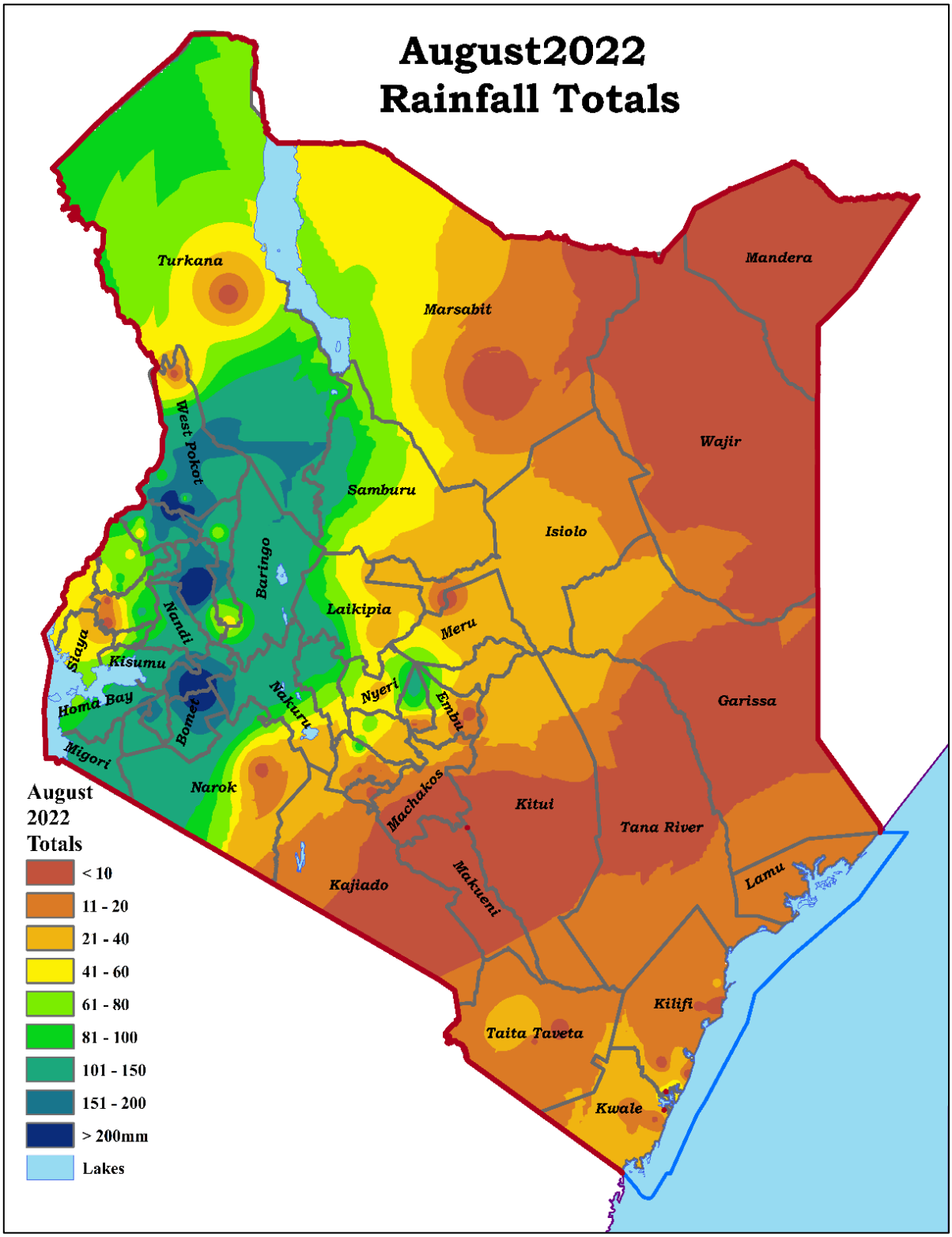

Fig. 2b: Observed August 2022 Rainfall Totals

3.2 Temperature Review in August 2022

The month of August marks the end of the cold season. An analysis of temperature up to 30th August indicates that most parts of the country recorded mean temperatures that were cooler than average for the month of August, except Wilson Airport and Lamu where normal temperatures were recorded and Kakamega, Eldoret, Nyahururu, Nakuru and Eldoret where warmer than average temperatures were recorded.

There were a few days when several stations in the Highlands East of the Rift Valley, including Nairobi County and a few areas over the Highlands West of the Rift Valley recorded maximum temperatures that were below 18°C. For instance, Nyahururu recorded 13.6°C on 2nd August 2022. Other stations that recorded low temperatures on the same day are Nyeri (14.4°C), Kangema (14.6°C), Ngong (14.6°C), Meru (14.8°C), Kabete (16.0°C), Dagoretti (16.2°C), Eldoret (16.5°C) and Kericho (16.6°C). On 3rd and 4th August, Kangema recorded 15.0°C and 14.9°C respectively. On 27th August Nyeri recorded 16.0°C while Kangema recorded 14.4°C. The lowest monthly average day time temperature of 18.8°C was recorded in Kangema station.

Several stations over the Highlands East and West of the Rift Valley, Nairobi and few stations over Southeastern lowlands and South Rift Valley occasionally recorded night time (minimum) temperatures below 10°C. For instance, Eldoret and Kericho recorded 8.2°C and 7.9°C respectively on 3rd August while Jomo Kenyatta International Airport, Kabete, Thika and Ngong recorded 7.6°C, 8.1°C, 8.3°C, and 8.8°C respectively on 18th August. Nyahururu, Narok, Machakos and Dagoretti recorded 4.5°C, 6.0°C, 6.5°C and 8.0°C respectively on 19th August. The lowest monthly night time temperature (8.8°C) was recorded in Nyahururu station.

3.3 Experienced Impacts

3.3.1 Agriculture and Food Security

The dry conditions over the ASAL regions of the Northern and parts of the Eastern sectors of the country resulted in inadequate food, water, pasture and browse for human and livestock use. Livestock deaths were reported in most of the Northeastern counties and the remaining livestock were in poor body conditions. Frost bite was recorded in parts of Nakuru County and destroyed acres of maize crop.

3.3.2 Disaster Management

The dry conditions experienced during the month of August have worsened the drought conditions over the Northern and Eastern parts of the country.

Three people lost their lives and three others were injured when their vehicle was swept away by the flooded Kaptarin River in West Pokot following heavy rains that pounded the area on 1st August 2022.

Two women were swept by floods as they attempted to cross the flooded Kerio River in Baringo on 27th August 2022.

Strong winds of more than 25knots were reported over the northeast (Marsabit County). However, these winds did not cause any structural damage.

3.3.3 Transport and Public Safety

Fog occurrence was reported along the Nairobi-Nakuru highway and over few areas in the Highlands East of the Rift Valley during the first half of the month. For instance, Meru Meteorological Station reported five consecutive hours of fog on 13th August while Nyeri reported four consecutive hours of fog on 5th August. The fog did not significantly affect transport or public safety.

3.3.4 Water Resources Management and the Energy

The water levels in the hydroelectric power generating dams over the Highlands East of the Rift Valley were low owing to the dry weather conditions experienced over their catchment areas.

Residents of the Northeastern sector of the country walked for long distances in search of water for human and livestock use.

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

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