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THE RAINFALL OUTLOOK FOR MARCH 2024 AND REVIEW FOR FEBRUARY 2024

1 HIGHLIGHTS

1.1 The Rainfall Outlook for March 2024

The March 2024 outlook suggests that above-average rainfall is expected across most parts of the country. Specifically, the Lake Victoria Basin, Highlands West of the Rift Valley, Northern, Central, and South Rift Valley, Highlands East of the Rift Valley including Nairobi, South-Eastern Lowlands, Northwestern, Northeastern, and the Coastal Strip are anticipated to receive increased rainfall, as per the forecast. Additionally, it's important to note that isolated episodes of heavy rainfall may still occur in various parts of the country during the month.

1.2 February 2024 Rainfall Review

Sunny and dry weather conditions prevailed over most parts of the country during the month. However, rainfall was received during the fourth week over most parts except over the Coast where dry weather conditions prevailed. A few areas in Nyeri, Migori, Bungoma, Kakamega and Kisii received occasional rainfall throughout the month. Several parts of the country recorded rainfall that was near to above the February Long Term Mean (LTM) except over the Coastal region, Northeast, a few stations over Central Rift Valley, Southeastern lowlands and Highlands East of the Rift Valley where below average rainfall was recorded.

Maximum temperatures were warmer than normal over most parts of the country; a few stations, however, experienced lower than their average temperatures for the month. Minimum temperatures were warmer than normal over the whole country

2 THE OUTLOOK FOR MARCH 2024

2.1 The Rainfall outlook for March 2024

The forecast indicates that most parts of the country are likely to experience above average rainfall. ***Figure 1*** depicts the expected rainfall pattern in March 2024.

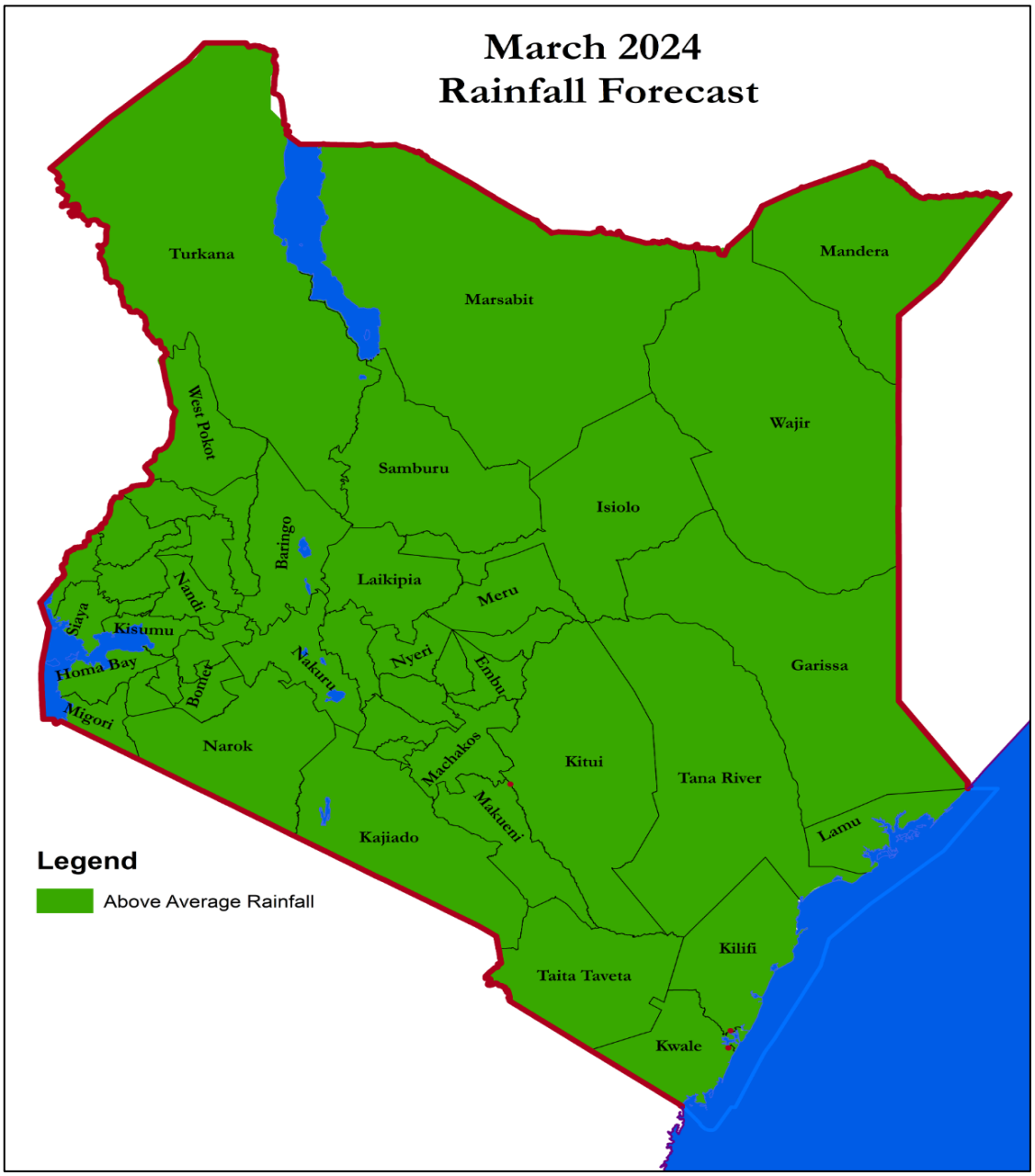

Figure 1: March 2024 Rainfall Outlook

2.1.1 Specific Outlook for Individual Areas

2.1.1.1 Counties in the Highlands West of the Rift Valley, Lake Victoria Basin, Central and South Rift Valley, (Kisii, Nyamira, Trans Nzoia, Baringo, Uasin Gishu, Elgeyo Marakwet, West Pokot, Nandi, Siaya, Kisumu, Busia, Homa Bay, Migori, Laikipia, Nakuru, Narok, Kericho, Bomet, Kakamega, Vihiga and Bungoma):

Rainfall is expected to continue throughout the month, with the onset of the rains anticipated to extend from February. The expected rainfall amounts are likely to exceed the long-term average for March.

2.1.1.2 Counties in the North-Western Region (Turkana and Samburu):

Most areas are expected to experience sunny and dry conditions, although occasional rainfall is anticipated starting from the fourth week. The expected rainfall amounts are forecasted to be higher than the long-term average for March.

2.1.1.3 Counties in the Highlands East of the Rift Valley (Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Embu, Tharaka Nithi and Nairobi):

Rain is expected throughout the month, but there might be a short dry spell during the third week. The amount of rain we expect is likely to be higher than the long-term average for March.

2.1.1.4 Counties in the North-Eastern Region (Mandera, Marsabit, Wajir, Garissa and Isiolo):

Most of the month is expected to be characterized by sunny and dry conditions. However, a few areas may experience occasional rainfall towards the end of the month. The expected rainfall amounts for March are anticipated to be above the long-term average.

2.1.1.5 Counties in the South-Eastern Lowlands (Kajiado, Kitui, Makueni, Machakos and Taita Taveta):

Rainfall is expected during the month with occasional breaks. The expected rainfall amounts are likely to be above the long-term average for March.

2.1.1.6 Counties in the Coastal Strip (Mombasa, Tana River, Kilifi, Lamu and Kwale):

Mainly sunny and dry weather conditions are expected during the first half of the month. Rainfall is anticipated during the third to fourth weeks of March over the South Coast and from the fourth week of March to the first week of April over the North Coast. The amount of rainfall expected is likely to be above the Long Term Mean for March.

2.2 Potential impacts

The following are the likely impacts during the month of March 2024, based on the forecast.

2.2.1 Agriculture and Food Security

The anticipated rainfall is expected to provide favorable conditions for agricultural endeavors in the high-potential regions encompassing the Highlands West and East of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley, as well as the Southeastern lowlands. Moreover, it is foreseen that pastureland will undergo rejuvenation in the arid and semi-arid (ASAL) areas of the Northern, Southeastern, and Coastal regions. Farmers are strongly encouraged to seize this opportunity to expand their crop cultivation and pasture production to fully leverage on the projected increase in precipitation.

Nonetheless, it is essential to be mindful of potential challenges that may arise with enhanced rainfall, including soil erosion, waterlogging, and land degradation. To mitigate these issues, farmers are advised to implement soil conservation measures and embrace sustainable land management practices as part of their agricultural strategies.

2.2.2 Disaster Management Sector

There is a possibility of isolated storms occurring, which could result in flash floods, particularly in the low-lying areas of the northern regions, the Southeastern lowlands, the Coastal region, parts of the Central and South Rift Valley, and inadequately drained urban areas. It is strongly recommended that the general public refrain from walking or driving through flooded areas or attempting to cross swollen rivers to prevent loss of lives. It is also advisable for relevant authorities to implement measures addressing flood-related concerns, including the prepositioning of both food and non-food supplies, as well as resource mobilization.

Additionally, there is a chance of lightning strikes happening over the Lake Victoria Basin and Western parts of the country, notably in areas like Kisii, Kisumu, Nandi, Kakamega, and Bungoma (specifically, Mt.

Elgon areas). The public is cautioned against seeking shelter under trees or near metallic structures, particularly during rainy conditions.

2.2.3 Water Resources Management and Energy

The boosted rainfall is set to enhance water availability, benefiting both domestic and livestock use. To meet their water requirements, the public is encouraged to adopt rainwater harvesting and storage practices.

Nevertheless, the increased rainfall may have some adverse effects, including heightened siltation and sedimentation in certain rivers and dams, as well as the potential for flooding, such as river channel overflows, urban flooding, and flash floods. In light of these challenges, relevant authorities are advised to prioritize dam desilting efforts and implement measures for separating storm water and wastewater channels. These steps can help mitigate the impact of flooding on communities.

Furthermore, the increased inflow into hydropower reservoirs is expected to boost hydropower generation and contribute to groundwater recharge for geothermal power production. However, it's important to note that this heightened rainfall may also lead to disruptions in power supply, which could result in social and economic losses. Therefore, there is a pressing need to enhance power transmission and distribution infrastructure to ensure a reliable and stable power supply.

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2.2.4 Environment

The increased rainfall is expected to supply ample soil moisture, promoting favorable conditions for tree growth. It is strongly recommended that the public engage in tree planting initiatives to contribute to the expansion of forest cover across the country. However, it's important to note that excessive rainfall can potentially result in environmental deterioration, particularly in the form of soil erosion.

In light of this, the public is advised to adopt sound agricultural practices, including the implementation of soil conservation measures, to help safeguard and preserve the environment.

2.2.5 Health

The increased rainfall is expected to have a positive impact on food availability, which, in turn, should help decrease nutrition-related diseases. However, there is a potential risk of higher instances of waterborne and vector-borne diseases due to water source contamination resulting from flooding and the presence of stagnant water, which can serve as breeding grounds for disease-carrying insects like mosquitoes.

To mitigate these risks, it is advisable for relevant authorities to strengthen disease surveillance and early detection systems. Additionally, they should distribute insecticide-treated mosquito nets to areas with a higher risk of disease transmission. Provision of water treatment chemicals to communities that rely on open water sources is crucial for ensuring safe drinking water. Lastly, promoting education on Water and Sanitation Hygiene (WASH) practices can play a vital role in preventing the spread of waterborne diseases.

2.2.6 Transport and Public Safety

Anticipated intermittent flash floods could result in the disruption of transportation infrastructure, particularly in regions including the Highlands West of the Rift Valley, the Lake Victoria Basin, South Rift Valley, Tana River Basin, Northeastern, and sections of the Southeastern lowlands. It is also important to note that reduced visibility caused by the weather conditions may lead to a rise in road, marine, and aviation accidents.

3 REVIEW OF THE WEATHER DURING FEBRUARY 2024

3.1 Review of February 2024 Rainfall Performance

The weather in most parts of the country in February was characterized by sunny, hot and dry conditions. However, rainfall was received over most parts during the fourth week except over the Coastal region and several areas over Northeast where dry weather conditions persisted throughout the month. A few areas in Nyeri, Migori, Bungoma, Kakamega, Kisii and Narok experienced occasional rainfall throughout the month. An analysis of rainfall up to 29th February indicates that several parts of the country received near to above average rainfall except over the Coastal region and several stations over the Northeast where below average rainfall was recorded. The highest monthly rainfall of 199.8 was recorded in Butere rainfall station of Kakamega county followed by Kisii Meteorological station with 174.3mm. Other stations that recorded significant amounts of rainfall are Matungu rainfall station (166.6mm),Busia Ministry of Water rainfall station (147.1mm), Kisumu Meteorological station (142.8mm), Miyare rainfall station (137.1mm), Kangaita Forest rainfall station (135.9mm), Eldoret Meteorological station (134.3mm), Kericho Meteorological station (125.8mm), Chehe Forest rainfall station (125.6mm), Kilibwoni Health Centre rainfall station (123.8mm), Korieko rainfall station (114.7), Eldoret International Airport (114.6mm), Koromanguch rainfall station (114.4mm), Kabage Forest rainfall station (114.1mm), Meru Meteorological station (112.2mm), Eluuya Girls School rainfall station (111.2mm), Zaina rainfall station (110.9mm) and Nyaroya rainfall station (109.4mm). All the other stations recorded less than 100mm with most stations over the Coast as well as Wajir recording less than 1 mm of rainfall while Garissa recorded no rainfall at all throughout the month.

The month was characterized by isolated storms especially during the fourth week of February. For instance, Kasunguni rainfall station in Kitui county recorded 90.0mm in twenty-four hours on 27th February while Kabete Meteorological station recorded 88.6mm on the same day. Other stations that recorded more than 50 mm of rainfall in twenty-four hours are shown in **Table 1.**

Table 1: Stations that recorded high amounts of Rainfall in 24 hours.

Station	County	Amount	Date
Eldoret Meteorological Station	Uasin Gishu	84.0	19-2-2024
Voi Meteorological Station	Taita Taveta	77.4	29-2-2024
Eldoret International Airport	Uasin Gishu	74.6	27-2-2024
Kitisi Rainfall Station	Makueni	70.0	27-2-2024
Butere Rainfall Station	Kakamega	70.0	10-2-2024
Kisumu Meteorological Station	Kisumu	68.9	27-2-2024
Butere Rainfall Station	Kakamega	56.8	10-2-2024
Eluuya Girls School Rainfall Station	Bungoma	56.1	11-2-2024
Masongaleni Rainfall Station	Makueni	55.5	27-2-2024
Mavindini Ward Rainfall Station	Makueni	55.5	27-2-2024
Kibauni Rainfall Station	Machakos	55.5	27-2-2024
Kasikeu Rainfall Station	Makueni	53.7	27-2-2024
Oldonyiro Health Centre Rainfall Station	Isiolo	53.6	27-2-2024
Kisii Meteorological Station	Kisii	53.1	27-2-2024
Kapkatet Rainfall Station	West Pokot	53.0	27-2-2024
Zaina Rainfall Station	Nyeri	53.0	29-2-2024
G.K Prison King'ong'o Rainfall Station	Nyeri	52.2	27-2-2024
Kikumbulyu South Rainfall Station	Makueni	52.0	27-2-2024

Kilibwoni Health Centre	Nandi	51.2	27-2-2024
Nguutani Rainfall Station	Kitui	51.0	27-2-2024
Ikutha Chief's Camp Rainfall Station	Kitui	50.2	27-2-2024

Figure 2A displays the overall quantity of rainfall received during the month, while **Figure 2B** compares the amount of rainfall recorded in February (indicated by blue bars) with the Long-Term Mean (LTM) for February (indicated by red bars).

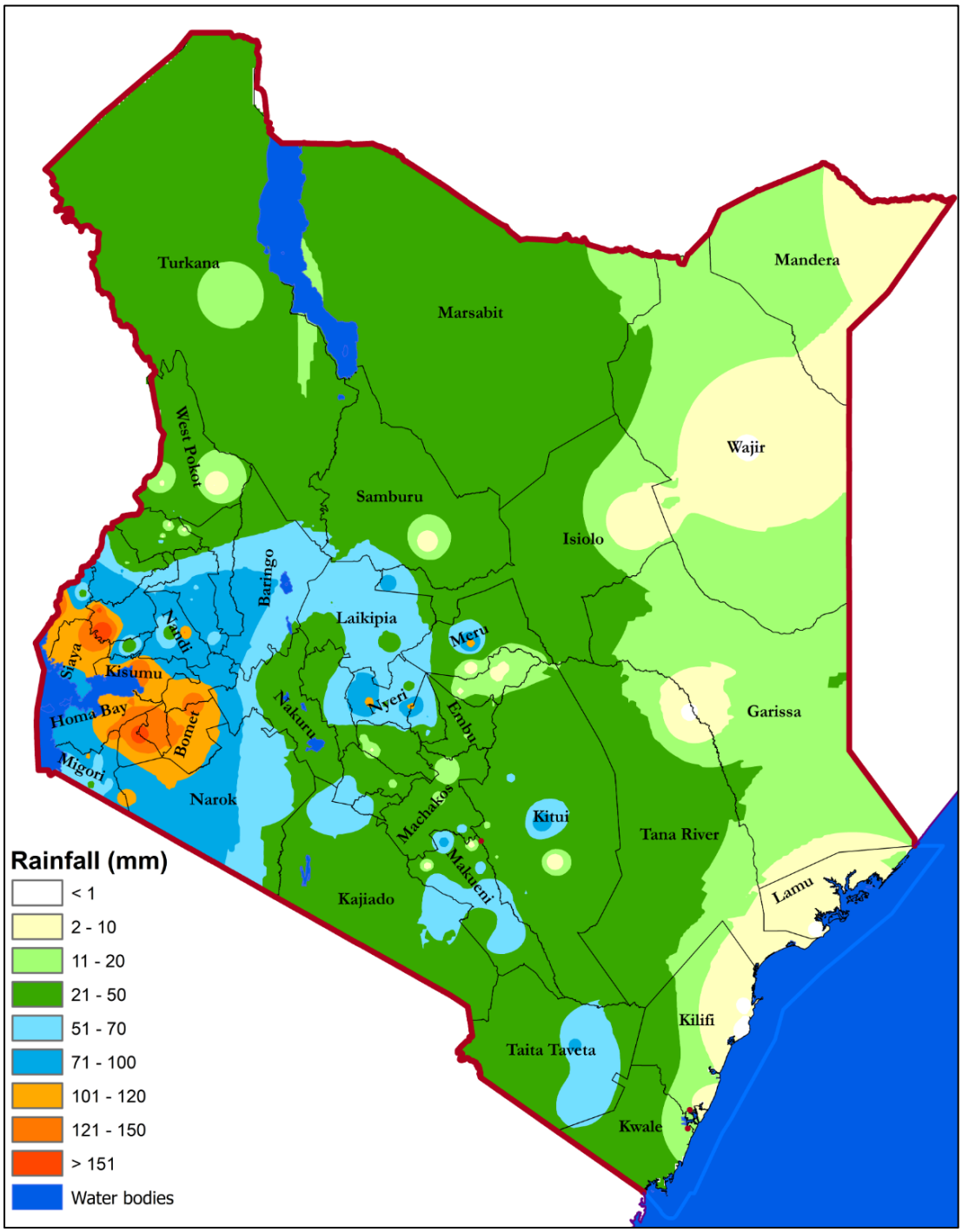

Figure 2a: February 2024 Rainfall Totals

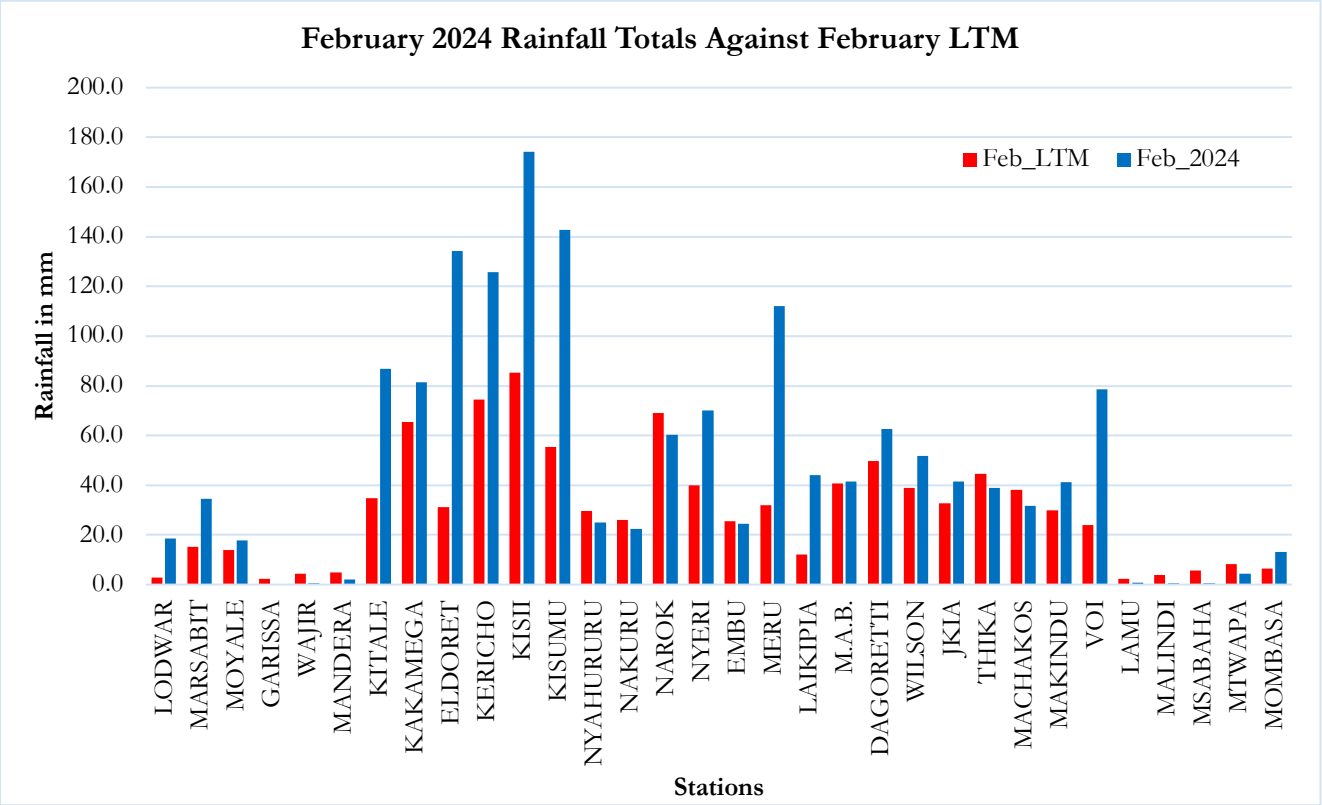

Figure 2b: February 2024 Rainfall Totals vs February LTM

3.2 Review of February 2024 Temperature Performance

Most parts of the country recorded daytime (Maximum) temperatures that were above the February LTM except Kitale, Kakamega, Kericho, Kisumu and Narok that recorded cooler than average temperatures. Night time (Minimum) temperatures were above the February LTM over the whole country. The highest daily maximum temperature (of 39.8°C) was recorded in Lodwar on February 18, 2024, while the lowest daily minimum temperature (of 6.0°C) was recorded in Nyahururu on February 1, 2024. Figures 3a and 3b show the maximum and minimum temperature anomalies respectively for February. Positive anomalies indicate warmer than average temperatures while negative anomalies indicate cooler than average temperatures.

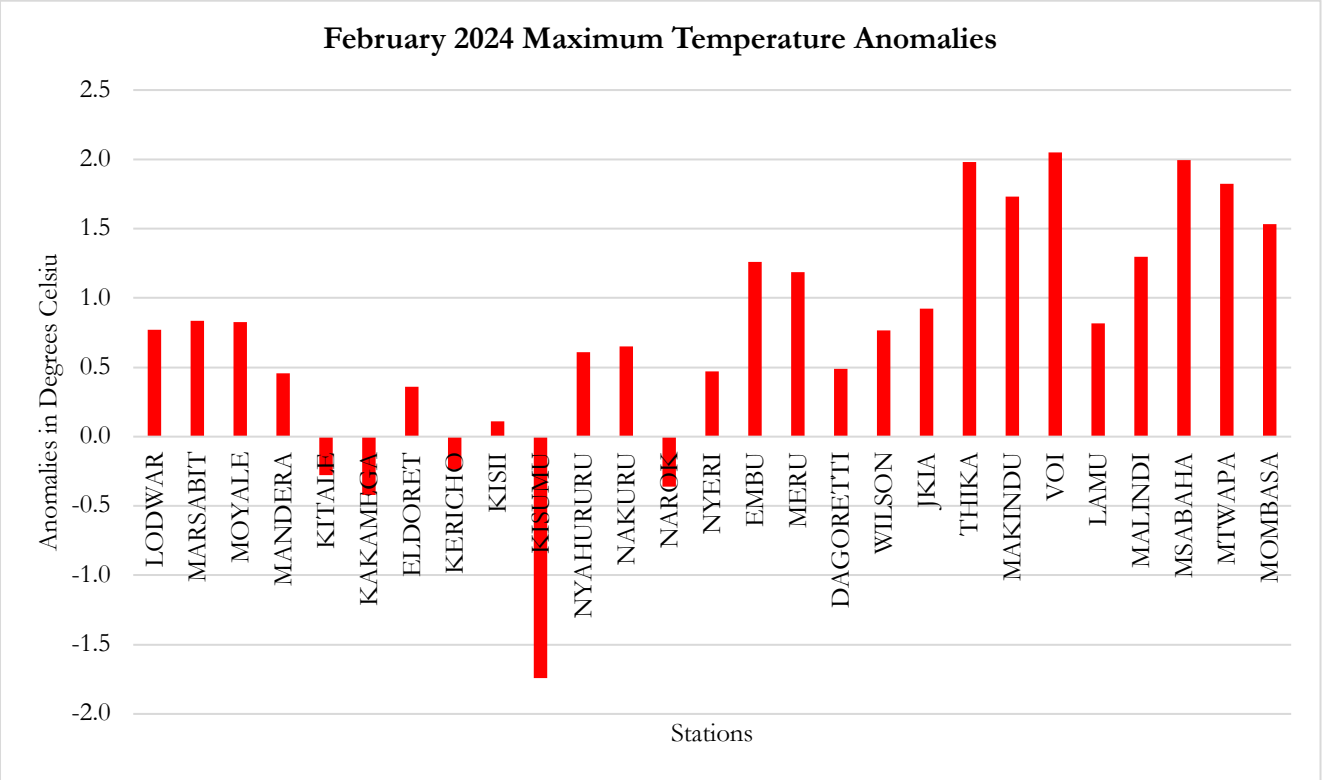

Figure 3a: February Maximum Temperature Anomalies

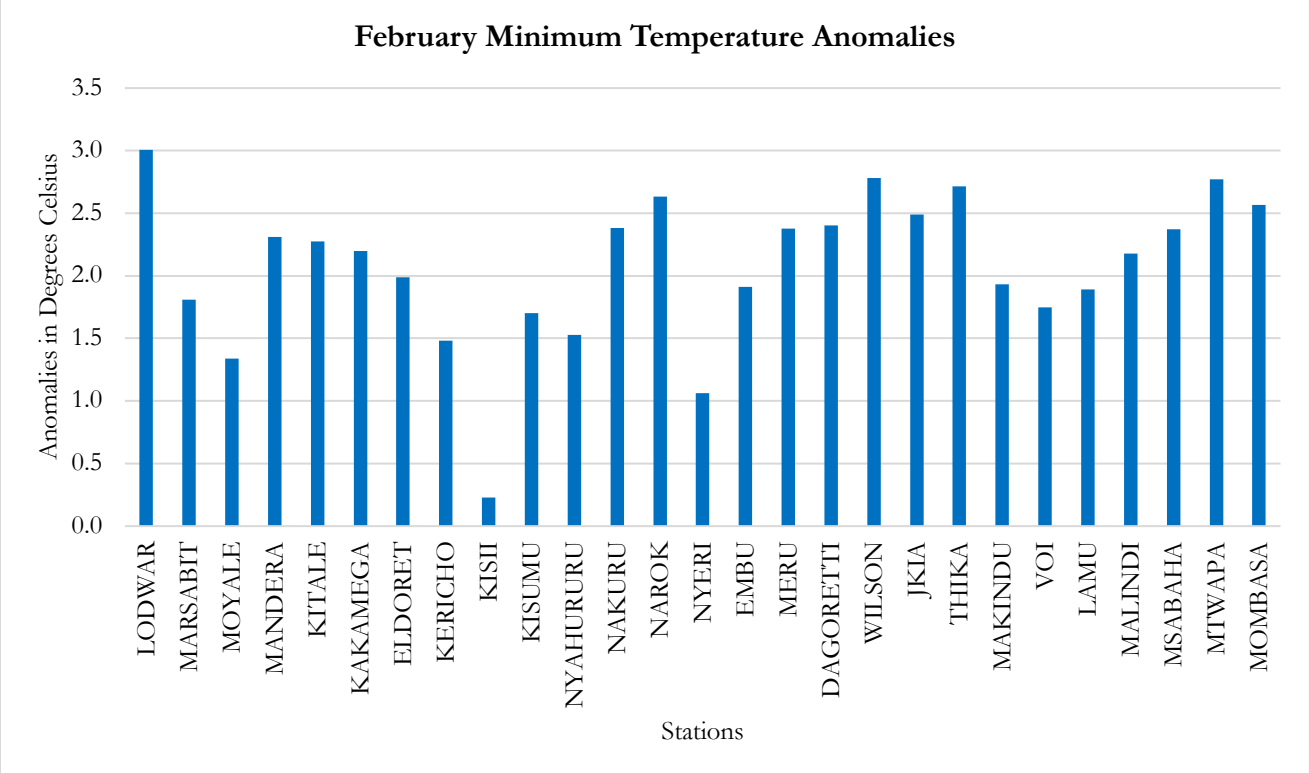

Figure 3b: February Maximum Temperature Anomalies

3.3 Experienced Impacts in February 2024

3.3.1 Agriculture and Food Security

The dry weather conditions were favorable for harvesting crops in high potential areas and for preparing land ahead of the long rainy season. However, in areas where harvesting had not been completed, the rainfall towards the end of February posed a threat of post-harvest losses.

3.3.2 Disaster Management

The rainfall experienced in a few areas, particularly in the South Rift Valley, Northeastern, and Highlands East of the Rift Valley during the month, was accompanied by strong winds that caused destruction to property on various dates:

- On February 10th, property was destroyed at Maasai Mara University. Additionally, roofs were blown off and houses were destroyed in Narok town and its surroundings.
- On February 14th, several houses in Bomet had their roofs blown off.
- Narok suffered another wave of destruction on February 20th, with roofs being blown off again.
- On February 27th, several homesteads in Katoloni village of Wote subward, Makueni County, were destroyed. Additionally, several vehicles were destroyed along Kiambu walkabout when trees fell on them after being uprooted by the strong winds.
- On February 28th, several houses were destroyed in Korr, Marsabit County. On the same day, classrooms, staff rooms, and stores of Mbiuni primary school in Makueni County were destroyed after their roofs were blown off

3.3.3 Health

Reports indicate that cases of cholera were confirmed in several counties, including Lamu, Nairobi, Tana River, and Isiolo. Furthermore, Rift Valley Fever outbreaks were reported in both Marsabit and Wajir Counties. Notably, there was a substantial increase in malaria cases specifically within Wajir County.

3.3.4 Environment

Heavy rains accompanied by strong winds resulted in the uprooting of numerous trees in Narok and Kiambu counties. This phenomenon not only caused destruction to vegetation but also contributed to land degradation in these areas.

3.3.5 Transport

Transport was temporarily disrupted along Kiambu road near Ridgeways on 26th February after a tree branch fell and blocked part of the road following heavy rains that were accompanied by strong winds

NB: This weather outlook is meant to be used in conjunction with the 24-hour, 5-day, and 7-day regular updates provided by the Kenya Meteorological Department. It is also important to note that County Meteorological Offices issue weekly county forecasts that should also be considered.

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DIRECTOR OF KENYA METEOROLOGICAL SERVICES