



## Kenya Meteorological Department

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND  
FORESTRY

KENYA METEOROLOGICAL DEPARTMENT

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### WEATHER OUTLOOK FOR OCTOBER AND REVIEW OF SEPTEMBER 2024

#### 1. HIGHLIGHTS

##### 1.1. The Rainfall Outlook for October 2024

The outlook for October 2024 indicates that the Highlands west of the Rift Valley, the Lake Victoria Basin, the Central and South Rift Valley, the Northwest, the Highlands east of the Rift Valley (including Nairobi County), isolated areas in the Northeast (parts of Marsabit), and parts of the Southeast (Machakos and parts of Kajiado) are likely to experience near to above-average rainfall for the month. In contrast, the Coastal region, most of the Southeastern lowlands, and the majority of the Northeastern zone are expected to receive near to below-average rainfall.

The onset of the Short Rains season is anticipated between the fourth week of October and the first week of November over the eastern part of the country, while it is expected to occur in the third to fourth week of October over the central parts, including Nairobi County. The rains are expected to continue from September over the western part of the country. The onset over the Northwest is expected to carry on from September but is likely to be followed by a dry spell.

##### 1.2. The Rainfall Review for September 2024

The Highlands west of the Rift Valley, the Lake Basin, and the Central Rift Valley received significant amounts of rainfall during the month of September. The Highlands east of the Rift Valley, including Nairobi County, also received occasional rainfall during the month, especially at the beginning and towards the end. Cool and cloudy conditions were also experienced at the beginning of the month. The rest of the country remained generally dry, though a few areas over the Coast and isolated areas in Narok, Turkana, Marsabit, and Taita Taveta counties received light to moderate rainfall for a few days.

Both maximum and minimum temperatures were warmer than normal over most parts, except at Jomo Kenyatta International Airport, where maximum temperatures were slightly lower than normal.

#### 2. THE OUTLOOK FOR OCTOBER 2024

This climate outlook is based on models developed from the expected evolution of global Sea Surface Temperatures (SSTs). Currently, ENSO-neutral conditions prevail, with equatorial SSTs near-to-below-average in the central and

eastern Pacific Ocean. La Niña is highly likely to emerge between September and November, with a 71% likelihood, and is anticipated to persist through the January-March 2025 period.

### 2.1 Rainfall Forecast for October 2024

As shown in Figure 1, Counties in the Highlands West of the Rift Valley, the Lake Victoria Basin, the Central and South Rift Valley, the Highlands East of the Rift Valley including Nairobi County and isolated areas in Northeast (parts of Marsabit) and parts of Southeast (Machakos and parts of Kajiado) are likely to experience near to above average rainfall for October. The Coastal region, most of the Southeast and most of the Northeast are likely to experience near to below average rainfall.



Figure 1: October 2024 Rainfall Forecast.

## 2.1 Specific Forecast for Individual Areas

- 2.1.1.** The Highlands West of the Rift Valley (Trans Nzoia, Kericho, Bomet, Nandi, Uasin Gishu, West Pokot, Elgeyo Marakwet, Kakamega, Vihiga, Bungoma, Kisii and Nyamira counties); the Lake Victoria Basin (Kisumu, Homa Bay, Migori, Siaya and Busia counties); the Southern and Central Rift Valley (counties of Narok, Nakuru, Baringo and parts of Laikipia); are likely to receive rainfall with some breaks during the month. The expected total rainfall amounts are likely to be near to above the long-term average amounts for October.
- 2.1.2.** The Northwest (Turkana and Samburu Counties) and parts of Northeast (Western Marsabit) are likely to experience occasional rainfall during the month. The expected total rainfall amounts are likely to be near to above the long-term average for October.
- 2.1.3.** The Highlands East of the Rift Valley (including Nairobi County) (counties of Kirinyaga, Nyandarua, Nyeri, Murang'a, Embu, Meru, Kiambu, Tharaka Nithi and parts of Laikipia), are likely to experience rainfall from third or fourth week of October, though a few areas are also likely to experience rainfall at the beginning of the month, followed by a dry spell. The expected total rainfall amounts are likely to be near to slightly above the long-term average amounts for October.
- 2.1.4.** Southeastern lowlands (Kajiado, Makueni, Machakos, Taita Taveta and Kitui Counties) are likely to experience dry weather conditions for most of the month. However, rainfall is likely during the fourth week. The rainfall amounts are likely to be near to slightly below the long-term average amounts for October for most of the areas with the exception of Machakos and northern parts of Kajiado where rainfall is likely to be near to slightly above the October LTM.
- 2.1.5.** The Northeastern (Isiolo, Wajir, Mandera, Garissa and parts of Marsabit counties) are likely to experience dry weather conditions for most of the month. However, rainfall is likely during the fourth week. The rainfall amounts are likely to be below the long-term average amounts for October.
- 2.1.6.** The Coast (Lamu, Kilifi, Mombasa, Kwale and Coastal Tana River counties) are likely to remain generally dry with occasional morning showers till the fourth week when onset is likely to be achieved. The expected total rainfall amounts are likely to be below the long-term average amounts for October.

## 2.2 Expected Onset Dates

The expected onset dates and the distribution of rainfall were derived from statistical analysis of past years (analogue years), which exhibited similar characteristics to the year 2024.

- 2.2.1.** Lake Victoria Basin, Highlands West of the Rift Valley and the Central Rift Valley: (Kakamega, Busia, Vihiga, Nandi, Elgeyo Marakwet, West Pokot, Baringo, Kisumu, Trans Nzoia, Siaya, Bungoma, Bomet, Uasin Gishu, Kisii, Kericho, Kisumu, Nyamira, Migori, Homa Bay, Baringo, Nakuru and western parts of Laikipia) are expected to continue experiencing rainfall continuing from September.
- 2.2.2.** Northwestern Kenya and parts of Northeast (Counties of Turkana, Samburu and Western Marsabit) is expected to continue experiencing rainfall spreading from the month of September, though this is likely to be followed by a dry spell.

- 2.2.3. Northeastern Kenya: (Counties of Mandera, Wajir, Garissa, Isiolo and most of Marsabit) is expected to experience the onset in the fourth week of October to first week of November;
- 2.2.4. Highlands East of the Rift Valley including Nairobi and a few areas in Central Rift Valley (Counties of Nairobi, Meru, Embu, Nyeri, Murang'a, Kiambu, Tharaka Nithi, Kirinyaga, Nyandarua and southern parts of Nakuru) will experience occasional rainfall at the beginning of the month which will be followed by a dry spell till the third or fourth week of October when onset is likely.
- 2.2.5. The South Rift Valley (Narok County) is expected to receive rainfall during the fourth week of October to first week of November though occasional rains may be experienced over a few areas at the beginning of the month, followed by a dry spell.
- 2.2.6. The Southeastern Lowlands: Counties of Machakos, Kitui, Makueni, and Tana River) are likely to realize the onset during the fourth week of October to first week of November. Counties of Kajiado and Taita Taveta are likely to experience onset during the first to second week of November. However, a few areas in northern Kajiado may experience occasional rainfall at the beginning of the month, followed by a dry spell.
- 2.2.7. The Coastal Strip Counties: Onset over the Coastal strip (Lamu, Kwale, Mombasa, Kilifi and the Coastal Tana River) is expected during the fourth week of October to first week of November. Occasional morning showers are however expected during the month.

### 2.3. Potential Impacts

The following are the likely impacts during the month of October 2024:

#### 2.3.1. Agriculture and Food Security

The expected near to above average rainfall in the Highlands West of the Rift Valley, Central and North Rift Valley is likely to provide sufficient soil moisture to sustain agricultural production. The rains may however affect harvesting, drying and storage of grains adversely.

The continuation of sunny and dry weather conditions in the Northeast counties and South-eastern Lowlands may lead to diminishing pastures for livestock in these regions. Close monitoring of the situation is therefore necessary.

#### 2.3.2. Disaster Management

In western Kenya where near to above average rainfall is expected, lightning strikes are highly probable, especially in Kisii, Kisumu, Nandi, Kakamega and Bungoma (Mt. Elgon areas) counties.

#### 2.3.3. Water Resources Management and Energy

The major river catchment areas for the country's hydroelectric power generating dams are forecast to receive near to above-average rainfall. The water levels in the dams across the country are therefore expected to be maintained during this period. Water harvesting should be used to harness rainwater.

#### 2.3.4. Environment and Forestry

The expected rainfall over the Highlands West of the Rift Valley, the Lake Victoria Basin and the Central Rift Valley is expected to maintain conducive soil moisture for the growing of trees. The public should therefore take advantage of these conditions and plant trees while putting in place measures to conserve the environment.

### 2.3.5 Health

In areas expected to receive near to average rainfall and have poor drainage systems, pools of stagnant water may form and lead to vector borne diseases such as Malaria as the stagnant water becomes conducive breeding areas for disease causing pathogens. Dry areas are likely to be susceptible to dust storms which may lead to an increase in respiratory tract diseases.

### 2.3.6 Transport and Public Safety Sector

The expected rainfall may result in slippery roads in some parts of the country and may lead to accidents. Flash floods may cause transport challenges, especially during rush hours and more so in areas where the roads become impassable when it rains.

## 3. WEATHER REVIEW FOR SEPTEMBER 2024

### 3.1. Rainfall Review

The Highlands West of the Rift Valley, the Lake Basin and the Central Rift Valley received significant amounts of rainfall during the month of September. The Highlands East of the Rift Valley, including Nairobi County, also received occasional rainfall during the month, especially at the beginning and towards the end of the month. This rainfall was near to above average over most parts, except Kisumu where below average rainfall was recorded. Cool and cloudy conditions were also experienced at the beginning of the month over the Highlands East of the Rift Valley and Nairobi County. The rest of the country remained generally dry, though a few areas over the Coast and isolated areas in Narok, Turkana, Marsabit and Taita Taveta counties received light to moderate rainfall.

As of 29th September, the highest monthly rainfall total (of 257.5 mm) was recorded in Kitale Meteorological station, followed by Kibabii University with 249.0 mm. Other stations that recorded high amounts of rainfall include Endebess Sub-County Agricultural office (208.2 mm), Kericho Meteorological office (191.8 mm), Kisii Meteorological station (188.3 mm), Mukakula Farm (165.6 mm), Busia Ministry of water (161.2 mm), Matungu Meteorological station (146.9mm), ADC Olngatongo (143.4mm), Kakamega Meteorological station (142.3mm), Butere (134.0 mm), Eluuya Girls Secondary School (133.2 mm). The rest of the stations recorded less than 130 mm of rainfall, with most stations over Northeast, Northwest, South Rift Valley and Southeastern lowlands recording no rainfall at all throughout the month, as seen in Figures 2a and 2b.

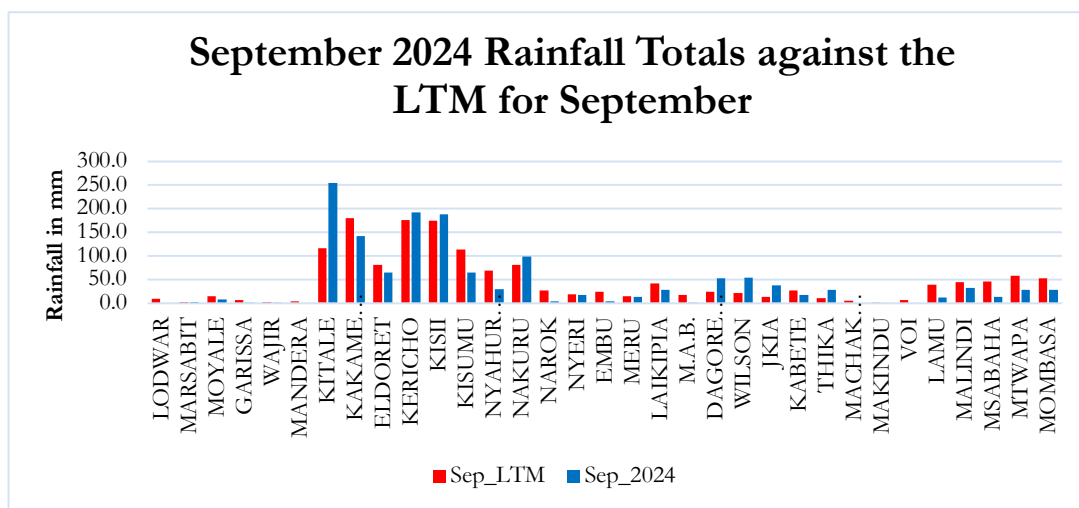


Figure 2a: September 2024 Rainfall Totals against LTM for September

# September 2024 Rainfall Totals

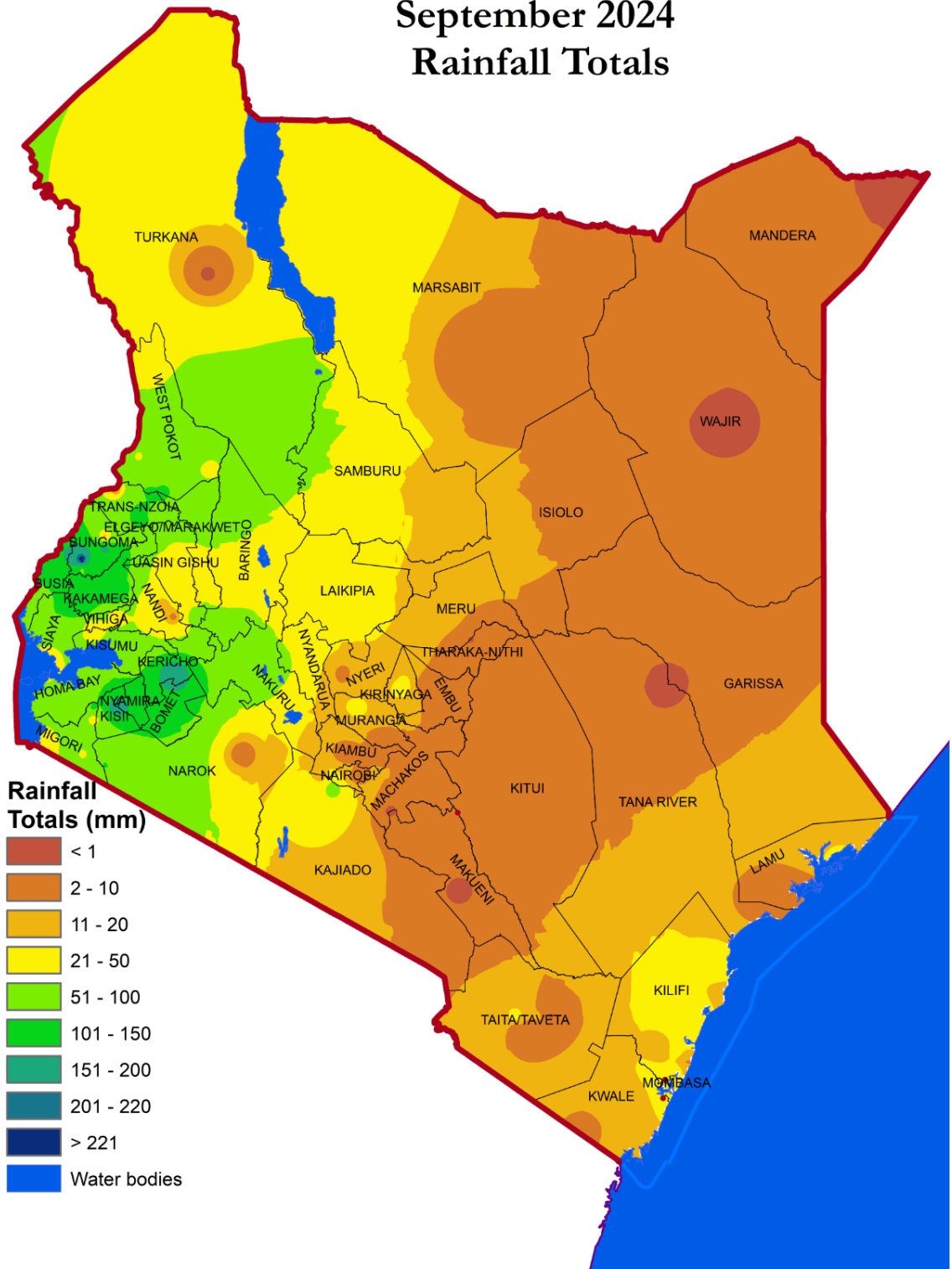


Figure 2b: September 2024 Rainfall Totals

### 3.2 Temperature Review

Both maximum and minimum temperatures were warmer than normal over most parts except Jomo Kenyatta International Airport where the maximum temperatures recorded were slightly lower than normal. Mandera occasionally recorded maximum temperatures above its September Long Term Mean of 35.7°C, recording its highest temperature (of 39.1°C) on 19th and 20th September. Minimum temperatures in Nyahururu were below 10°C for most of the days, except on 4th September when 10.4°C was recorded. However, these temperatures were higher than average. The highest monthly maximum temperature of 37.3 °C was recorded in Mandera while the lowest monthly minimum temperature (of 6.9°C) was recorded at Nyahururu station.

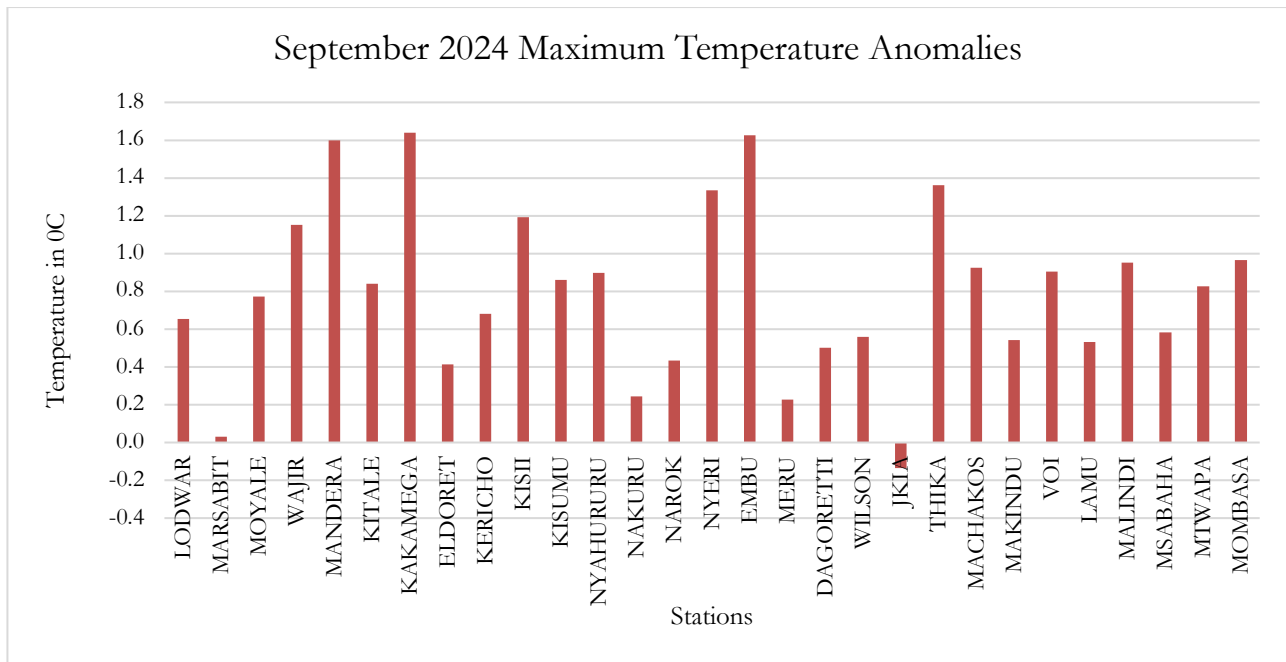
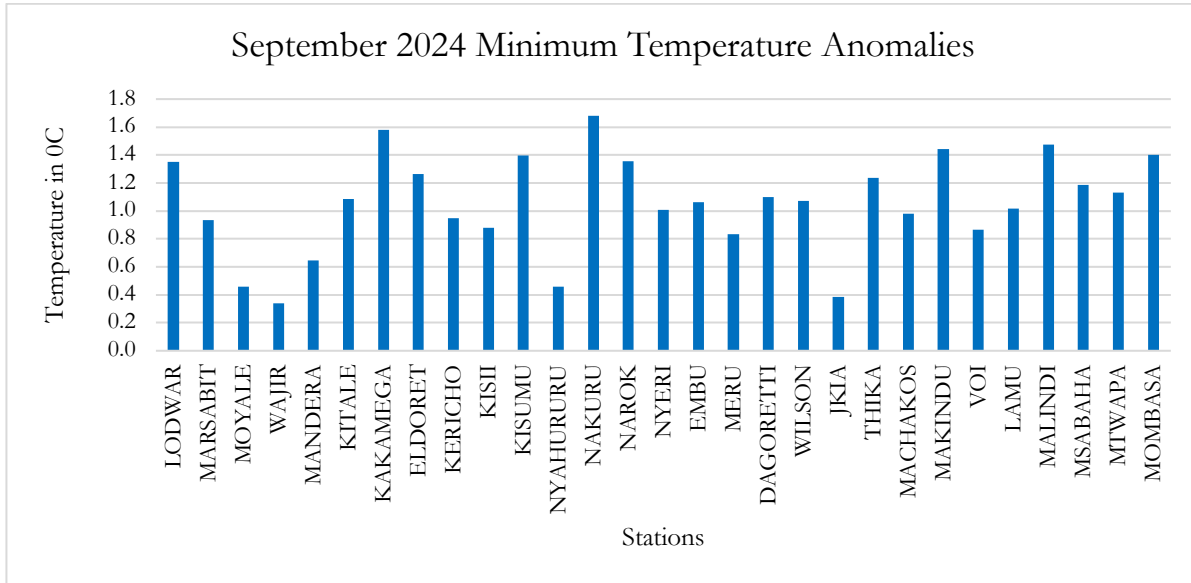


Fig. 3a: September 2024 Maximum Temperature Anomalies



**Fig 3b. September 2024 Minimum Temperature Anomalies**

***NB: This outlook should be used together with the 24-hour, 5-day, 7-day, 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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