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Meteorological
Department

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY

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CLIMATE OUTLOOK FOR JUNE 2024 RAINFALL PERFORMANCE IN MAY 2024

1. HIGHLIGHTS

1.1 The Forecast for June 2024

The June 2024 outlook predicts generally dry and sunny conditions for several parts of the country. The Highlands west of the Rift Valley, parts of the Central and Southern Rift Valley, the Lake Victoria Basin, parts of the Highlands East of the Rift Valley (Nyandarua and Western Laikipia) and parts of Northwestern Kenya are likely to experience above-normal cumulative rainfall. This rainfall may occasionally extend eastwards into other parts of the Highlands east of the Rift Valley and Nairobi County. In June, occasional cool and cloudy conditions with light rains are expected in the Central Highlands, Nairobi area, parts of western Kenya, the Central Rift Valley, and the Southeastern Lowlands as the cool season gradually sets in. The Coastal zone is expected to receive normal (long-term average) to above normal rainfall totals. Temperatures are anticipated to be warmer than average across the entire country.

1.2 Weather Review for May 2024

The month of May marked the cessation of the "Long Rains" season over several parts of the country, except in the Highlands west of the Rift Valley, the Lake Victoria Basin region, the Central and South Rift Valley, parts of the Highland East of the Rift Valley and the Coastal region where the rainfall is expected to continue up to June. In May 2024, rainfall was received 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 parts of the Coastal region. The Southeastern Lowlands, Northeast, and Northwest remained generally dry for most of the month, except during the first week when significant amounts of rainfall were experienced. Most stations across the country received near to above average rainfall, except in the Northwest, a few stations in the Northeast (Wajir), Southeast (Makindu and Voi), Nyeri, and most stations along the Coast, where below-average rainfall was recorded.

2. The Forecast for June 2024

The forecast for June 2024 is based on regression of sea surface temperatures (SSTs), SST gradients, and the expected evolution of global SST patterns as well as upper air circulation patterns over Western Kenya and the Coastal region.

The forecast indicates that several parts of the country will be generally dry and sunny during the month of June 2024. However, above-average rainfall is expected over several parts of the Highlands West of the Rift Valley, Central and South Rift Valley, Lake Victoria Basin, parts of the Northwest and parts of the Highlands East of the Rift Valley (Nyandarua). The Coastal strip is likely to experience near to above average rainfall

as indicated in **Figure 1a**. The forecast for June 2024 compares closely to the average rainfall patterns shown in Figure 1 b (Climatology).

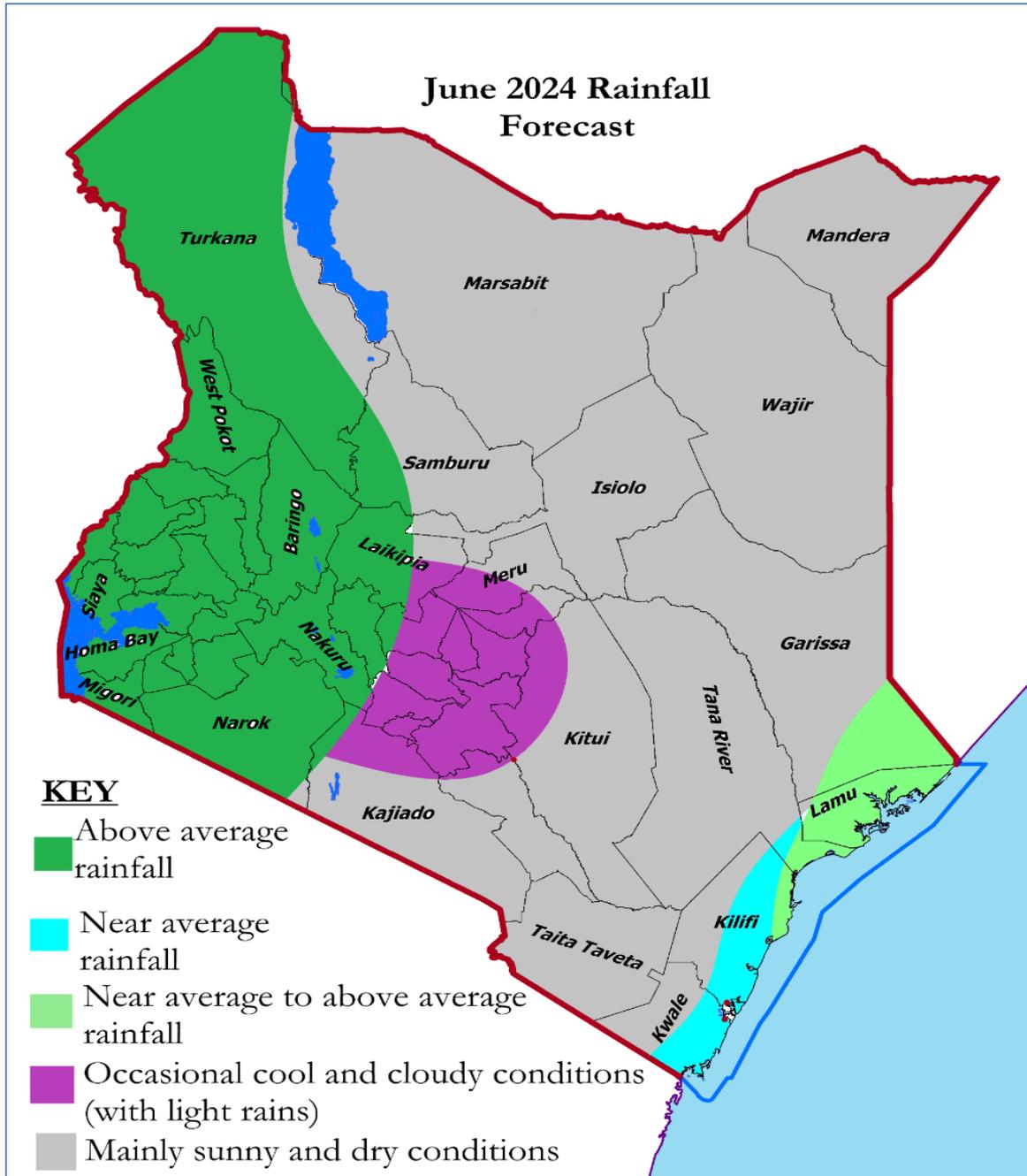


Figure 1(a): June 2024 Rainfall Forecast

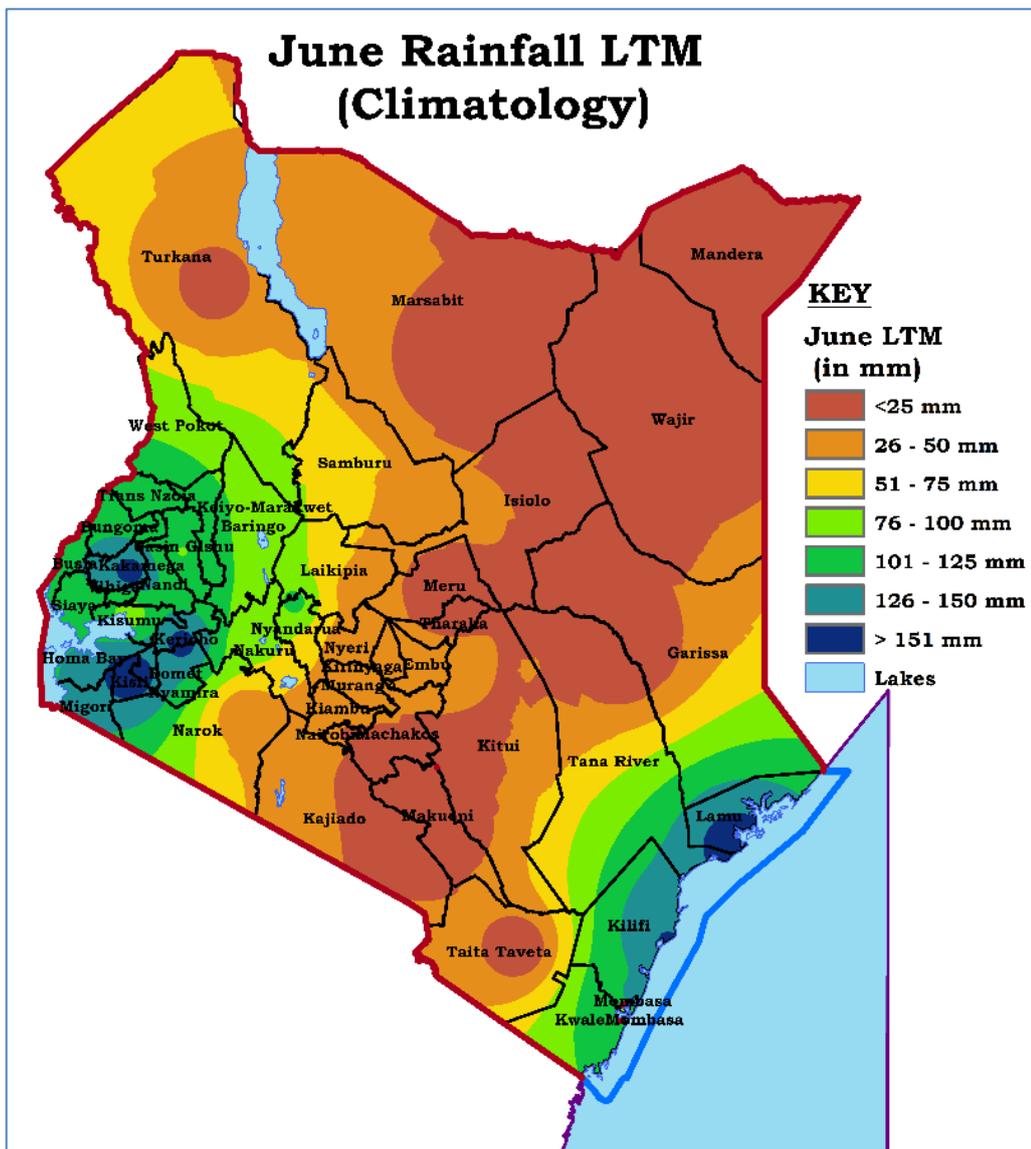


Figure 1(b). The rainfall climatology of June.

Occasional cool and cloudy conditions with light rains will be observed in the Central Highlands, including the Nairobi area, and some parts of western Kenya, the Central Rift Valley, and the Southeastern Lowlands as the cold season gradually sets in. Additionally, occasional afternoon showers emanating from western Kenya may also be experienced over the Central Highlands, including Nairobi County.

2.1 Specific Outlook for Individual Areas

2.1.1 Highlands West of the Rift Valley and Central Rift Valley (Trans Nzoia, Baringo, Uasin Gishu, Elgeyo Marakwet, Nandi, Nakuru, West Pokot counties and the Western part of Laikipia County); The Lake Victoria Basin and South Rift Valley (Siaya, Kisumu, Homa Bay, Migori, Busia, Kakamega, Vihiga, Bungoma, Kisii, Nyamira, Narok, Kericho, and Bomet counties and parts of the Highland East of the Rift Valley (Nyandarua County):

Rainfall is expected throughout the month with occasional breaks. The total rainfall amount is expected to be above the long-term average amounts for June.

2.1.2 Northwestern Region (Turkana and Samburu counties):

Occasional rainfall is expected during the month, with the total likely to be above the long-term average amounts for June.

2.1.3 The Highlands East of the Rift Valley (including Nairobi area): (Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Embu, Tharaka Nithi, Nairobi counties and parts of Eastern Laikipia) are expected to experience occasional cool and cloudy (overcast skies) conditions, with occasional light morning rains/drizzles. The cumulative rainfall in this region is likely to be above the long-term average amounts for June. A few days are expected to be cold and chilly with daytime (maximum) temperatures falling below 18°C in various parts due to overcast skies. Occasional afternoon and evening showers are likely to occur.

2.1.4 Northeastern Kenya (Mandera, Marsabit, Wajir, Garissa and Isiolo counties) are likely to remain generally sunny and dry. However, a few high ground areas in Marsabit county are likely to experience occasional morning cloudy and foggy conditions.

2.1.5 South-eastern Lowlands (Kitui, Makueni, Machakos, Taita Taveta, Kajiado counties and most parts of Tana River County) are expected to be generally sunny and dry throughout the month. However, a few areas bordering the Central Highlands and Nairobi (parts of Machakos, Kajiado, Kitui counties), Chyulu and Taita hills in Makueni and Taita Taveta Counties) are likely to experience occasional cool and cloudy conditions with light rains.

2.1.6 The Coastal strip (Mombasa, Kilifi, Lamu, Kwale and the Coastal parts of Tana River County): Occasional rainfall is expected during the month, with the total likely to be near average (South Coast) to above (North Coast) the long-term average amounts for June.

3. POTENTIAL IMPACTS OF THE JUNE FORECAST

The following are the likely impacts during the month of June. There is a possibility of flooding in low-lying areas, flood plains, and along rivers, especially over the Lake Victoria Basin where above-average rainfall is expected. Relevant authorities are therefore advised to implement measures to mitigate possible negative impacts that may arise. The public is advised to refrain from driving or walking through flooded rivers or moving waters.

Cases of lightning strikes are still likely over the Lake Victoria Basin and Highlands West of the Rift Valley. The public is advised to avoid seeking shelter near metallic structures or under trees to prevent loss of life.

3.1.1 Agriculture and Food Security Sector

The expected rainfall is anticipated to be conducive for agricultural production, particularly in the high-potential counties in the Lake Victoria Basin Region, Highlands West of the Rift Valley, as well as Central and Southern Rift Valley.

3.1.2 Health Sector

Cases of respiratory diseases such as asthma attacks, pneumonia, flu, and the common cold are expected to increase over Nairobi County, the Highlands East of the Rift Valley, parts of the Central Rift Valley, and Highlands West of the Rift Valley as the cold season gradually sets in. The public in these areas is advised

to keep warm and avoid using charcoal *jikos* in poorly ventilated houses, as these *jikos* produce carbon monoxide gas, which can be lethal if inhaled.

3.1.3 Transport and Public Safety

Fog formation in areas expected to experience cold and cloudy conditions may pose a danger to motorists due to low visibility. Drivers should exercise caution, especially along the Nairobi-Naivasha Highway, particularly on the Kikuyu-Kinungi stretch. Light rains and drizzles may cause roads to become slippery, increasing the risk of accidents. All road-users are advised to take utmost care to minimize accidents resulting from such weather conditions. Elsewhere, fog may occasionally disrupt operations at the Wilson and Jomo Kenyatta International Airports.

3.1.4 Water Resources Management and the Energy Sectors

The water catchment areas over the Highlands West of the Rift Valley are expected to experience rainfall during the month. Consequently, there is a possibility that the maximum water level in the hydroelectric power generation dams may be exceeded. Therefore, it is imperative to conduct careful reservoir management and continuously monitor water levels in these areas to avoid any negative impacts that may arise if the dams overflow.

3.1.5 Environment

The expected rainfall over the Highlands West of the Rift Valley, Lake Victoria Basin Region, Central, and Southern Rift Valley is anticipated to maintain conducive soil moisture for tree growth. Stakeholders are encouraged to seize this opportunity to plant and grow trees. It is also essential to implement measures to conserve the environment alongside tree planting efforts.

4. REVIEW OF THE WEATHER IN MAY 2024

4.1 Rainfall Review

The month of May marked the cessation of the Long-Rains over most parts of the country, except the Coastal region, the Western half and isolated areas in the Highland East of the Rift Valley. In May 2024, rainfall occurred over the Highlands West of the Rift Valley, Lake Victoria Basin, Central and South Rift Valley, the Highlands East of the Rift Valley including Nairobi County, and the Coastal region. However, the Southeastern lowlands, Northeastern, and Northwestern Kenya remained generally dry for most of the month, except during the first week when rainfall was experienced.

An analysis of May 2024 monthly rainfall indicates that most parts of the country experienced near to above-average rainfall. Nyeri, Makindu, Malindi, Msabaha, Mombasa, Lodwar, Wajir, Mtwapa, and Voi are the only stations that recorded below-average rainfall. The highest monthly rainfall total (452.0mm) was recorded at DCC's office in Limuru, followed by Chinga Tea Factory in Nyeri with 444.3mm as shown in Table 1. The rest of the stations recorded less than 260 mm of rainfall, with Voi Meteorological station recording the lowest amount of rainfall at 3.3mm.

Table 1: Stations that recorded more than 260mm of rainfall in May

S/NO	Station	County	Amount in mm
1	DDC office, Limuru	Kiambu	452.0
2	Chinga Tea Fuctory	Nyeri	444.3
3	Ndaka-ini Rainfall Station	Murang'a	426.0
4	Gatare Rainfall Station	Murang'a	368.6
5	Kakamega Meteorological Station	Kakamega	356.4
6	Kangema Meteorological Station	Murang'a	348.7
7	Lamu Meteorological Station	Lamu	322.3
8	Kabarak Meteorological Station	Nakuru	321.3
9	Kagwe Tea Factory Rainfall Station	Kiambu	306.5
10	Kisii Meteorological station	Kisii	297.5
11	Kabage Forest Rainfall Station	Nyeri	293.6
12	Kiguru Rainfall Station	Kitui	288.8
13	DCC's Office Githunguri Rainfall Station	Kiambu	276.4
14	Dagoretti Meteorological station	Nairobi	273.5
15	Kabete Meteorological station	Nairobi	270.2
16	Kericho Meteorological station	Kericho	266.4
17	Moi Air Base Meteorological station	Nairobi	265.0
18	Nabichakha Secondary Rainfall Station	Bungoma	263.9
19	Kimakia Forest Rainfall Station	Murang'a	260.1

The season was characterized by severe storms over the Highlands West of the Rift Valley, Highlands East of the Rift Valley including Nairobi, Southeastern lowlands, Northeastern, and the Coastal region. Faza Secondary School rainfall station in Lamu recorded 140.7mm on 23rd May, while Lamu Meteorological station recorded 138.4mm on the same day, leading the stations that recorded high amounts of rainfall in 24 hours, as shown in Table 2.

Table 2: Stations that recorded high amounts of rainfall in 24 hours

S/NO	Station	County	Amount in mm	Date
1	Faza Secondary School rainfall station	Lamu	140.7	23/05/2024
2	Lamu Meteorological Station	Lamu	138.4	23/05/2024
3	Kiguru Rainfall station	Kitui	114.6	3/05/2024
4	Lamu Fisheries Rainfall Station	Lamu	113.1	23/5.2024
5	Nkanini Farm Rainfall station	Kiambu	105.0	5/05/2024
6	Marsabit Meteorological station	Marsabit	97.0	3/05/2024
7	Kitinda Secondary Rainfall station	Bungoma	96.2	21/05/2024
8	Nabichakha Rainfall station	Bungoma	95.3	21/05/2024
9	Bungoma Water Supply Rainfall station	Bungoma	93.7	21/05/2024
10	Kiambicho Rainfall station	Murang'a	93.4	21/05/2024
11	Kavingoni Rainfall station	Kitui	92.5	3/05/2024
12	Khalaba Ward Rainfall station	Bungoma	91.3	21/05/2024
13	Wote Nziu Rainfall station	Makueni	89.7	5/05/2024
14	Machwele Vocational Centre Rainfall station	Bungoma	88.7	21/05/2024
15	Kakamega Meteorological Rainfall station	Kakamega	87.3	3/05/2024
16	Gurar Police Station Rainfall station	Wajir	83.4	3/05/2024
17	Dagoretti Meteorological Station	Nairobi	82.4	25/05/2024
18	NYS Witu Rainfall station	Lamu	79.9	22/05/2024
19	Bute Police Station Rainfall station	Wajir	79.9	04/05/2024
20	Lower Matasia Rainfall station	Kajiado	79.5	3/05/2024
21	Machakos Meteorological Station	Machakos	70.5	05.05/2024
22	Ekalakala Rainfall station	Machakos	71.4	02/05/2024
23	Kairungu Rainfall station	Kitui	71.3	01/05/2024
24	Mayori Rainfall station	Embu	69.7	3/05/2024
25	Kaisagat Small Park Rainfall station	Trans Nzoia	67.5	4/5.2024
26	Ndune Rainfall station	Embu	67.2	21/05/2024
27	NYS Mpeketoni Rainfall station	Lamu	66.7	22/05/2024
28	Mandera Meteorologica station	Mandera	65.4	06/05/2024
29	Kirie Rainfall station	Embu	65.4	21/05/2024
30	Kangema Meteorological station	Murang'a	64.0	17/05/2024
31	Masii Rainfall station	Machakos	64.0	3/05/2024
32	Kabarak Meteorological Station	Nakuru	63.0	24/05/2024
33	J.K.I.A Meteorological Station	Nairobi	62.4	02/05/2024
34	Kimende Secondary Rainfall station	Kiambu	61.3	03/05/2024
35	Ndaka-ini Rainfall station	Murang'a	60.8	16/05/2024
36	Gatare Forest Rainfall station	Murang'a	60.2	04/05/2024

Figure 2a shows the May 2024 rainfall recorded from 1st to 26th May (Blue bars) compared to the May LTMs (Red bars). Figure 2b depicts the May 2024 rainfall performance as a percentage of the May LTMs.

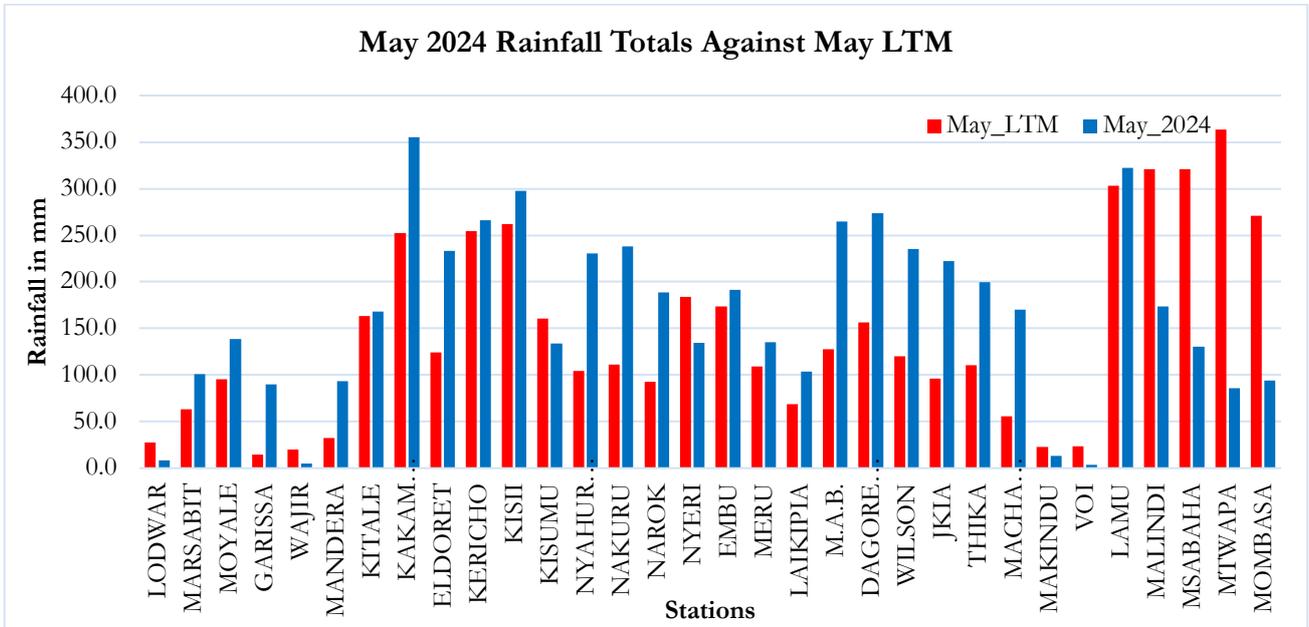


Figure 2a: May 2024 Total Rainfall Against May LTM

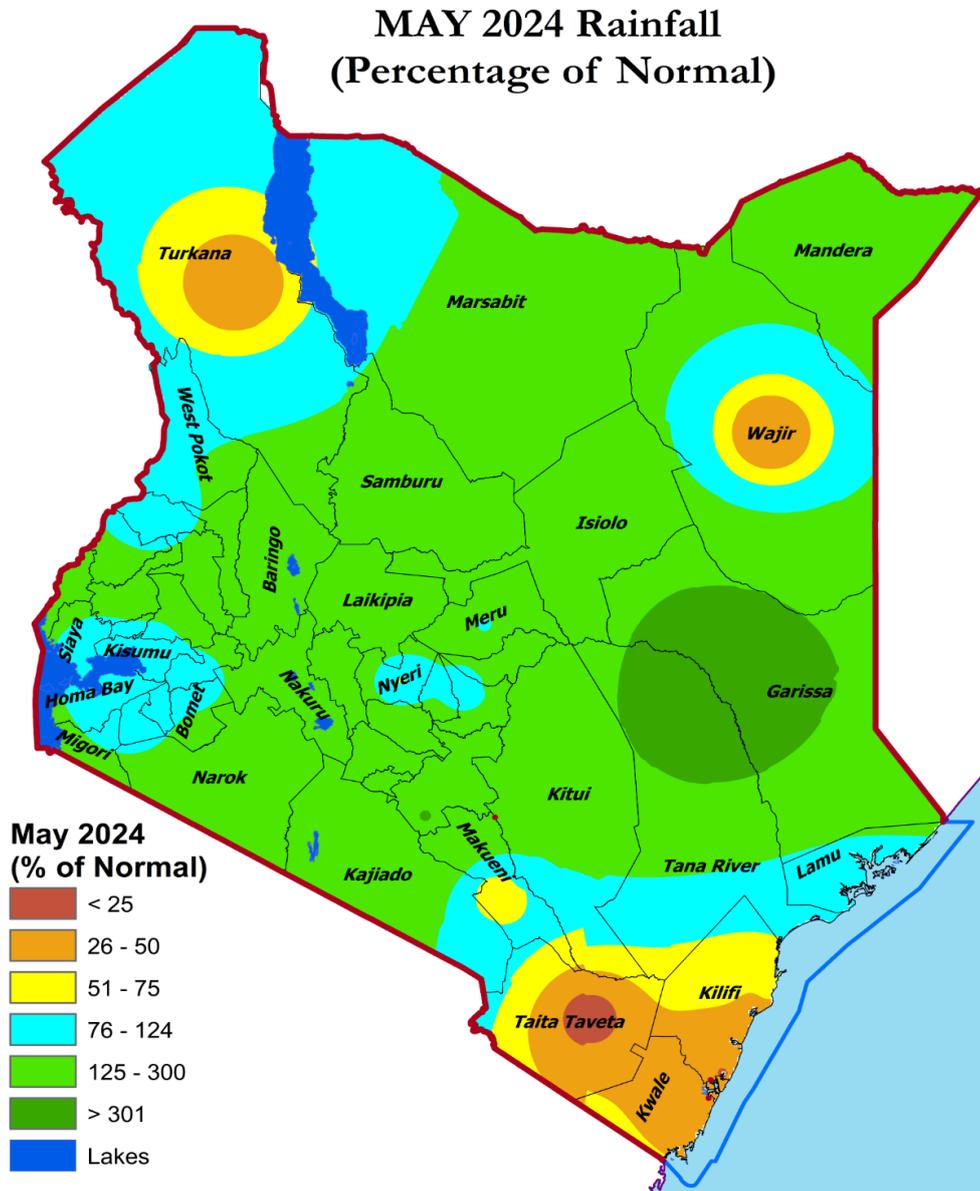


Figure 2b: May 2024 rainfall as a percentage of the May LTM

4.2 Tropical cyclones

During the month of May, East Africa experienced the impact of two tropical cyclones along its coastlines. The first cyclone, named Hidaya, made landfall on May 4th over Mafia Island in Tanzania. This event resulted in strong winds and high waves along the coastal areas of Kenya.

The second cyclone, Tropical Storm Ialy, intensified to the Tropical Cyclone stage on Tuesday, May 21st, 2024. Notably, it made history as the first tropical cyclone to form north of 5°S over the South-West Indian Ocean basin. This cyclone brought strong winds, high waves, and heavy rainfall over the coastal regions, further impacting the affected areas.

4.3 EXPERIENCED IMPACTS OF THE MAY 2024 RAINFALL

4.3.1 Agriculture and Food Security Sector

The heavy rains destroyed crops and washed away livestock in some parts of the country. For instance, approximately 5 hectares of maize were destroyed along the Nandi-Kakamega escarpment on 7th May, while chicken and vegetables were washed away on the same day in Nakuru County. On 9th May, approximately 300 sheep were washed away by floods in Tapach location of West Pokot County.

4.3.2 Disaster Management Sector

- A few fatalities were reported in Kilifi county and a few other people injured as strong winds from tropical storm Ialy blew off the roof of a school and a business premises on 21st May. The winds also destroyed property in Kilifi and Mombasa counties.
- Roofs of six classrooms in Karima Primary school, Kilifi County were blown off by strong winds experienced during the first week of May as a result of Tropical cyclone Hidaya.
- A few fatalities were reported in Kilifi, Kirinyaga, Migori, Uasin Gishu and Elgeyo Marakwet counties due to floods and landslides.
- A few businesses in Ol Kalou, Nyandarua County and Industrial Area of Nakuru County were destroyed by floods during the first week of May.
- A few households in Busia, Kakamega, Siaya and Bomet Counties were displaced by floods on diverse dates during the month.
- Several vehicles were destroyed in Nakuru County on 21st May, after trees fell on them following heavy rains that were accompanied by strong winds.

4.3.3 Transport and Public Safety

Transport disruptions were experienced in Narok during the first week of May due to floods that cut off the TTC-Oloroto bridge and Loita-Narok road. Elsewhere, Marine services over the Indian Ocean were disrupted during the first and fourth weeks of May due to the effects of cyclones Hidaya and Ialy, while rail transport along the Limuru-Longonot section was also affected.

4.3.4 Environment Sector

- The rainfall received during the month facilitated tree planting efforts across several parts of the country.
- Landslides and mudslides occurred in Murang'a, Nyeri, Kiambu, Elgeyo Marakwet, and Makueni counties on various dates, leading to environmental degradation. Strong winds in the Coastal region, Makueni, and Nakuru counties also destroyed trees.

4.3.5 Water and Energy Sector

Water levels in most dams, including hydroelectric power generating dams, remained high due to the rainfall experienced during the month. However, strong winds in some parts of the Coastal region on May 20th and 21st destroyed electricity poles, resulting in major blackouts.

4.3.6 Health Sector

Cholera cases were reported in Tana River, Lamu and Siaya Counties.

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



Dr. David Gikungu

DIRECTOR OF METEOROLOGICAL SERVICES