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**MINISTRY OF ENVIRONMENT & FORESTRY**  
**KENYAMETEOROLOGICALDEPARTMENT**

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**Date: 27<sup>TH</sup> APRIL, 2022**

**THE OUTLOOK FOR MAY 2022 AND WEATHER REVIEW FOR APRIL 2022**

**1. HIGHLIGHTS**

**1.1. *The Forecast for May 2022***

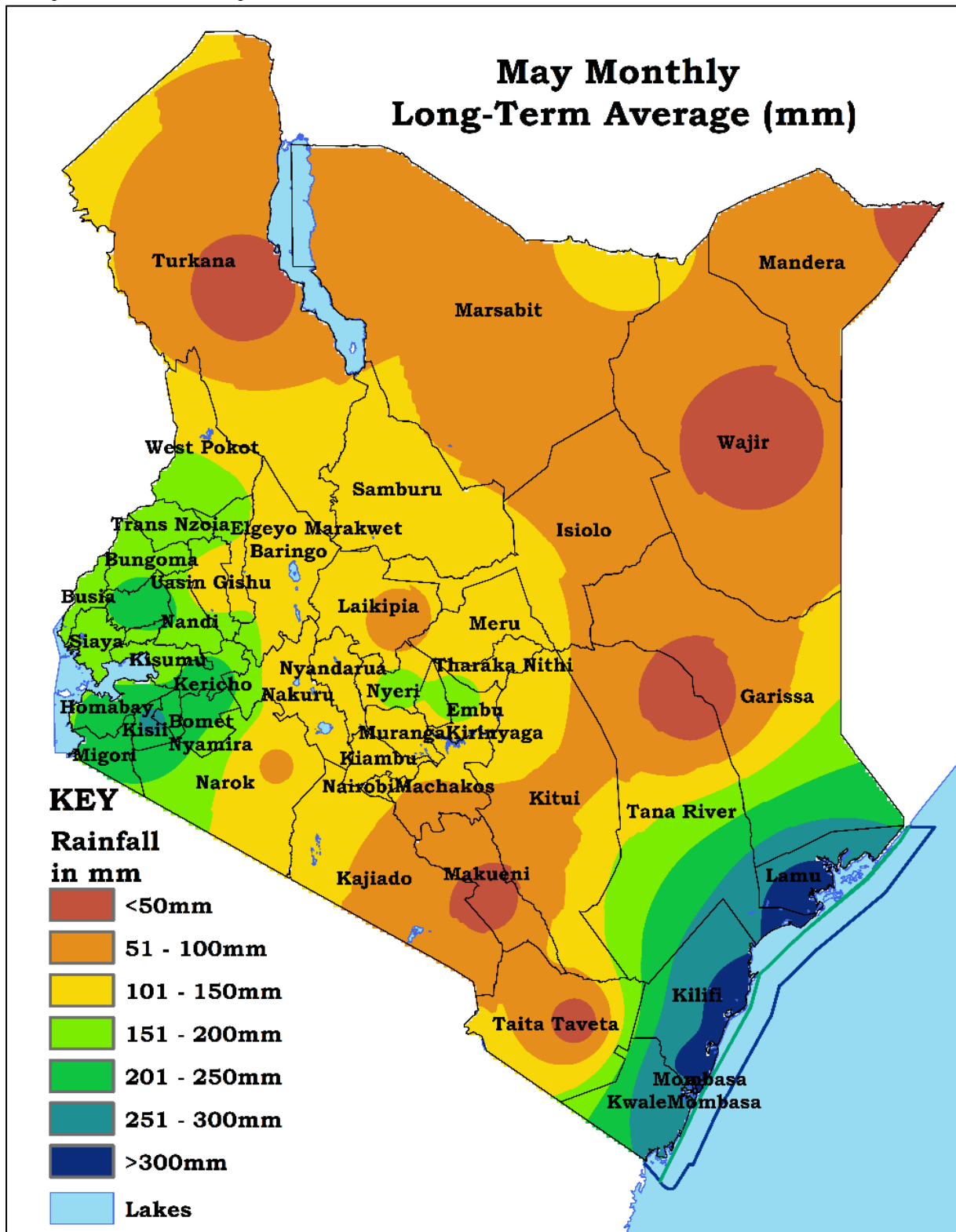
May marks the cessation of the “Long Rains” season over several parts of the country except for the Coastal region and Western Kenya. The outlook for May 2022 indicates that several parts of the Lake Victoria Basin region and Highlands West of the Rift Valley; parts of Central & Southern Rift Valley; and North Western Kenya are likely to experience slightly enhanced rainfall. Counties in the South-eastern lowlands, Coastal Strip, Highlands East of the Rift Valley including Nairobi are likely to receive near average rainfall. Counties in the North-eastern, parts of South-eastern lowlands and Coastal regions are likely to experience below-average rainfall. The distribution is likely to be poor in the Northwest, Northeast, Southeast as well as the Coastal region.

**1.2. *Weather Review for April 2022***

April marks the peak of the Long Rains (March-April-May) season. The first half of the month was characterized by dry weather conditions over most parts of the country except for a few areas over the Highlands West and East of the Rift Valley, Nairobi, and South-eastern lowlands where occasional rainfall was experienced. The second half of the month received substantial amounts of rainfall over most parts of the country except parts of the Northwest and Northeast where dry weather conditions persisted. The rainfall was however depressed (less than 75% of April Long Term Mean) over most parts of the country except over Eldoret, Narok, Kisii, Moyale, Thika, Kakamega, Embu, Dagoretti, Kericho and Jomo Kenyatta Airport where near average rainfall was received.

## 2. MAY 2022 FORECAST

The rainfall forecast for May 2022 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 on Kenyan rainfall. **Figure 1b** illustrates the Mean monthly rainfall in May.



**Figure 1a: May Mean Monthly Rainfall**

## 2.1 The Rainfall Forecast for May 2022

The forecast indicates that several parts of the Lake Victoria Basin region and Highlands West of the Rift Valley; parts of Central & Southern Rift Valley; and North Western Kenya are likely to experience slightly enhanced rainfall. Counties in the South-eastern lowlands, Coastal Strip, Highlands East of the Rift Valley including Nairobi are likely to receive near average rainfall. Counties in the North-eastern and parts of Southeastern lowlands and the Coast are likely to experience below-average rainfall. The rainfall distribution is likely to be poor in the Northwest, Northeast, Southeast as well as Coastal regions, as shown in **Figure 1b** below.

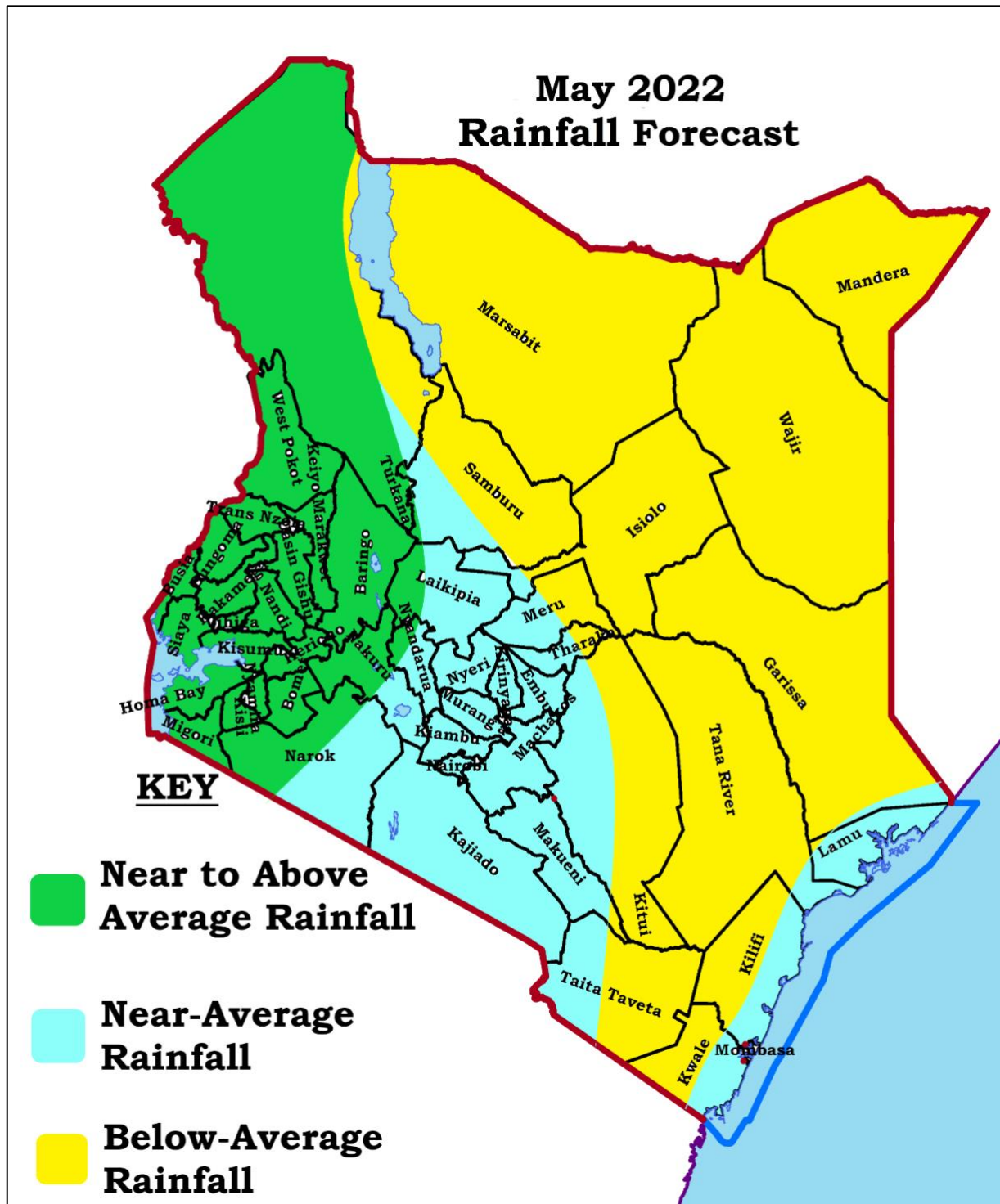


Figure 1b: Rainfall Forecast for May 2022

## 2.2. SPECIFIC OUTLOOK FOR INDIVIDUAL AREAS

**2.2.1. The Lake Victoria Basin (Siaya, Kisumu, Homa Bay, Migori, BusiaKisii, Nyamira); Highlands West of the Rift Valley (Trans Nzoia, Uasin Gishu, Elgeyo Marakwet, Nandi, Trans Nzoia, Baringo, Uasin Gishu, Elgeyo Marakwet, Nandi, Kakamega, Vihiga, Bungoma); and Central (Laikipia, Nakuru, Baringo) and South Rift Valley (Narok, Kericho, Bomet);** Rainfall is expected to continue during the month. However, the rainfall amounts are expected to be above average during the first half of the month and near average during the second half of the month. The rains will continue into the month of June.

**2.2.2. North-western Region (Turkana, West Pokot, and Samburu):** The first half of the month is likely to be characterized by near to slightly above average rainfall. Occasional rainfall is likely to occur during the second half of the month. The expected total rainfall amounts are likely to be near the long-term average for the region.

**2.2.3. Highlands East of the Rift Valley and Central Kenya (Nairobi, Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Embu, and Tharaka Nithi):** Near-average rainfall is expected during the first half of the month. However occasional dry spells are likely, especially during the second half of the forecast period. The rainfall amounts are likely to be near the long-term average for the region.

**2.2.4. North-eastern Region (Mandera, Marsabit, Wajir, Garissa, and Isiolo):** Occasional rainfall is expected at the beginning of the month. The rainfall is however likely to reduce in the third to fourth week as the rainy season comes to an end. The expected rainfall amounts are likely to be below the long-term average for the month of May.

**2.2.5. South-eastern Lowlands (Kajiado, Kitui, Makueni, Machakos, Tana River and Taita Taveta):** Occasional rainfall is expected during the first half of the month. It is however expected to reduce in the third to fourth week as the rainy season comes to an end. The rainfall amounts are likely to be near the long-term average for the month of May.

**2.2.6. The Coastal Strip (Mombasa, Parts of Tana River, Kilifi, Lamu, and Kwale):** is expected to receive occasional rainfall in May. The expected rainfall amounts are likely to be near the long-term average. May marks the peak of the Long rain season in the Coastal Strip.

## 2.3. Expected Cessation of The MAM 2022 “Long Rains” Season

- The Highlands West of the Rift Valley, the Lake Victoria Basin, parts of central Rift Valley (Nakuru, Laikipia, Baringo), and the Coastal strip are expected to continue receiving rainfall into June.
- The Highlands East of the Rift valley including Nairobi County is likely to experience cessation of the “Long Rains” during the third to fourth week of May.

- The Northwestern and Northeastern parts of the country are likely to experience cessation during the third to fourth week of May.
- The South-eastern parts of the country are likely to experience cessation of the long Rains during the second to the third week of May

## **2.4. POTENTIAL IMPACTS**

### **2.4.1. Agriculture and Food Security**

The expected rainfall is likely to be conducive for agricultural production especially 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 where near average to above-average rainfall is forecasted. The rains are expected to continue into the June-July-August season.

The below-average rainfall expected over the Coast and parts of the North-eastern may not be sufficient for agricultural practices and regeneration of pasture. Therefore, the current shortage of food, pasture and water for human and livestock use is expected to continue. Relevant authorities are advised to continue with measures that are already being implemented to avert the loss of lives, livelihood, and livestock.

### **2.4.2. Disaster Management**

The current drought being experienced over the ASAL areas of Northern Kenya and parts of the coastal regions is expected to continue. The shortage of food, water, and pasture may also lead to resource-based conflicts among the communities. The National and County governments, as well as humanitarian organizations, are therefore advised to escalate the measures that are already being implemented to avert the loss of lives, livelihoods, livestock and wild animals.

There is a likelihood of flooding in low-lying areas and flood plains especially over the **Lake Victoria Basin and Highlands West of the Rift Valley** as well as in poorly drained urban centers where occasional rainfall is expected. Relevant authorities are therefore advised to put in place measures to avert possible negative impacts that may arise. County Governments are also advised to clear drainages in good time to avert artificial flooding of the urban areas. The public is advised not to drive or walk-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** especially in Kisii, Kisumu, Nandi, Bungoma (Mt. Elgon areas), and Kakamega Counties. The public is advised not to shelter near metallic structures or under trees to pre-empt loss of life.

### **2.4.3. Water Resource Management and Energy**

Water shortage is likely to persist in areas expected to receive below normal rainfall. Thus, efficient water management should be carried out to ensure enough water resources are available for the animal and human population needs in these areas. Rainwater harvesting should also be encouraged to boost water availability for households as well as for livestock use.



The water catchment areas over the Highlands West and East of the Rift Valley are expected to experience occasional rainfall during the month. It is, therefore, expected that the optimum water level in the hydroelectric power generation dams will be maintained.

#### **2.4.4. Environment**

The enhanced rainfall over the **Lake Victoria Basin, Highlands West of the Rift Valley, Central and South Rift Valley** is expected to sustain soil moisture. Residents of these areas are advised to plant trees in order to contribute to the national target of 10% forest cover by 2022.

#### **2.4.5. Health**

There is still a likelihood of vector-borne diseases such as Malaria, especially over the **Lake Victoria Basin and the Highlands West of the Rift Valley**. Cases of dengue and chikungunya fevers may also increase in the **Coastal region**. Waterborne diseases may occur in flood-prone areas. Shortage of food in parts of the **Northeast** and **Northwest** may lead to malnutrition-related diseases.

Health authorities are therefore advised to reposition and redistribute medical supplies and insect-treated nets in the affected areas. The food security assessment should be carried out in the ASAL areas to identify the most vulnerable communities and provide them with water, food, and/or food supplements. Public health education on disease prevention as well as Water Sanitation and Hygiene (WASH)) should be carried out.

#### **2.4.6. Transport and Public Safety**

There is a likelihood of flash floods occurring over the **Lake Victoria Basin, the Highlands West of the Rift Valley, the Central and South Rift Valley, and parts of the Highlands East of the Rift Valley (including Nairobi County)** due to the expected rainfall in these areas. This may lead to structural damage to roads, bridges, and sub-standard infrastructure which may, in turn, lead to transport challenges, damage to property, and loss of lives. The public is therefore advised to be careful while driving in rainy weather to minimize accidents that could result from such weather conditions.

### **3. REVIEW OF THE WEATHER DURING APRIL 2022**

#### **3.1. Global Drivers of the Climate System in April 2022**

During the month of April 2022, Equatorial sea surface temperatures (SSTs) were below average across most of the Pacific Ocean implying La Nina conditions are present. Equatorial SSTs were warmer than average over most of the Indian Ocean for the week ending 24 April 2022. This pattern presented a neutral phase of the Indian Ocean Dipole (IOD). The zonal and meridional arms of the rain-bearing Inter-Tropical Convergence Zone (ITCZ) were mainly diffuse over the region, especially during the first half of the month.

#### **3.2. Review of Rainfall Performance During April 2022**

April marks the peak of the Long Rains (March-April-May) season. The first half of the month was characterized by dry weather conditions over most parts of the country except for a few areas over the Highlands West and East of the Rift Valley, Nairobi, and South-eastern lowlands where occasional rainfall was experienced. The second half of the month received substantial amounts of rainfall over most parts of the country except parts of the Northwest and Northeast where dry weather conditions persisted. Depressed rainfall was received over several parts of the country during the month. By the 28th of April, Eldoret, Narok, Kisii, Moyale, Thika, Kakamega, Embu, Dagoretti, Kericho and Jomo Kenyatta International Airport are the only stations that had received near average rainfall at 124.0%, 115.6%, 110.9%, 104.2%, 92.2%, 91.5%, 91%, 90.7%, 79% and 75.7% respectively. All the other stations recorded rainfall that was less than 75% of the April LTM (Depressed rainfall).

The highest monthly rainfall of 438.9mm was recorded at Kirie rainfall station in Embu County followed by Managia station also in Embu with 297.2mm. Other stations that recorded more than 200mm include Managia (Embu) 297.2mm, Kangema (Muranga) 296.1mm, Kisii Meteorological station 291.2mm, Malikini, (Embu) 286.6mm, Ngerenyi FTC (Taita Taveta) 284.9mm, Butere (Kakamega) 276.2mm, Embu Meteorological station 274.1mm, Gakoe Tea estate (Kiambu) 273.5mm, Kianamu (Embu) 272.8mm, Kasaani Pojos (Taita Taveta) 268.1mm, Uplands forest station (Kiambu) 262.5mm, Tigoni KALRO (Kiambu) 253.5mm, DCC's office Gatundu South (Kiambu) 248.8mm, Kamusinga High School (Bungoma) 248.4mm, Kakamega Meteorological station 244.1mm, Kieni Forest station (Kiambu) 240.6mm, Kiguru (Kitui) 236.9mm, Gitii Ngura (Embu) 232.6mm, Kamweti ATC (Kirinyaga) 230.9mm, Sagana Fish farm (Kirinyaga) 227.9mm, Mayori (Embu) 223.7mm, Wundanyi (Taita Taveta) 219.6mm, Makwa coffee estate (Kiambu) 217.8mm, Mukakula farm (Bungoma) 214.7mm, Ndune (Embu) 214.4mm, NIA Mwea (Kirinyaga) 214.0mm, Shigharo (Taita Taveta) 209.4mm. Thika Meteorological station 207.8mm and Kagwe Tea factory in Kiambu with 203.1. Mandera and Lodwar recorded less than 10mm of rainfall.

Severe isolated storms were recorded during the second half of the month over the Highlands West and East of the Rift Valley, Lake Victoria Basin, and the South-eastern lowlands. For instance, Castle forests station in Kiambu recorded 63.1mm in 24 hours on 16<sup>th</sup> April while Moyale station recorded 110.1mm on 17<sup>th</sup> April. Thika station recorded 50.7mm on 19<sup>th</sup> April while Kibabii University in Bungoma recorded 72.2mm on 20<sup>th</sup> April. On 21<sup>st</sup> April, Kirie and Malikini stations in Embu recorded 92.5mm and 67.3mm respectively. On the same day, KALRO Mwea (Kirinyaga), Ndithini (Machakos), and Kagwe Tea Factory (Kiambu) recorded 90.0mm and 79.5mm respectively. Eldoret Meteorological station recorded 69.7mm on 25<sup>th</sup> April. Malikini station in Embu recorded 80.7mm on 27<sup>th</sup> April. On the same day, Ndune station also in Embu recorded 80.0mm. On 28<sup>th</sup> April, Kavoo station in Kitui and Butere in Kakamega recorded 72.0mm and 56.8mm respectively.

Figure 2a shows the total amount of rainfall recorded in April 2022 (the blue bars) as compared to the LTMs – (the red bars) while Figure 2b depicts the spatial distribution.

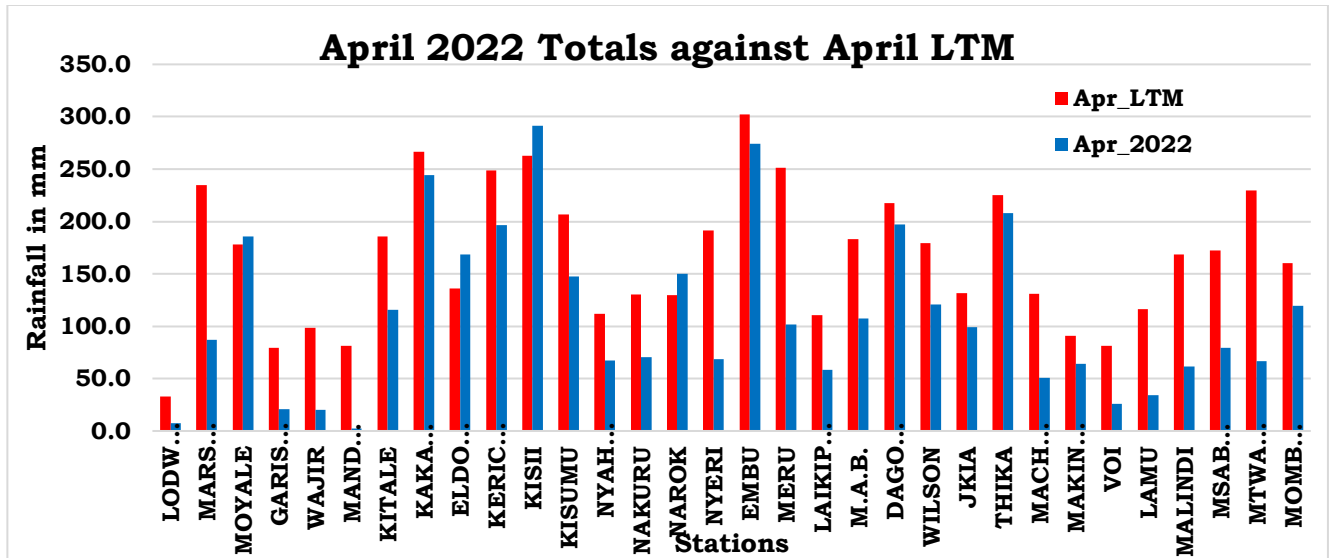


Figure 2a: April 2022 Rainfall as Compared to the April Long-Term Mean

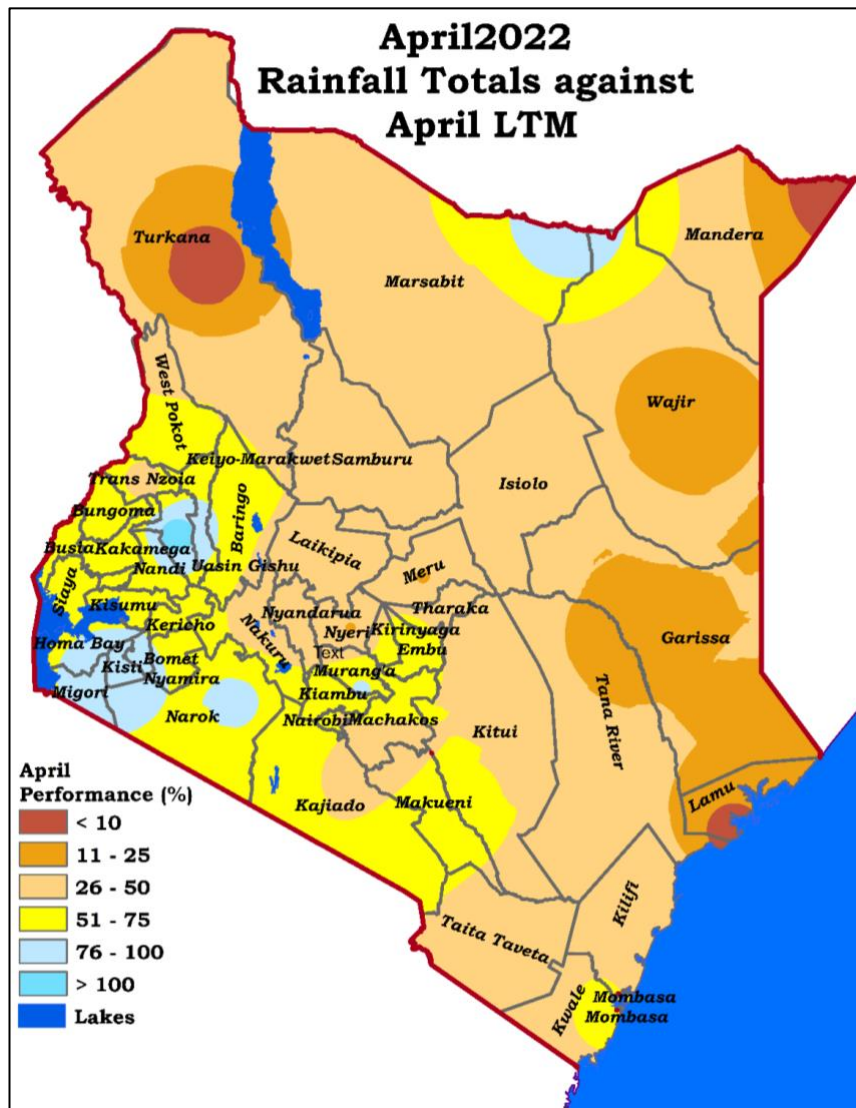
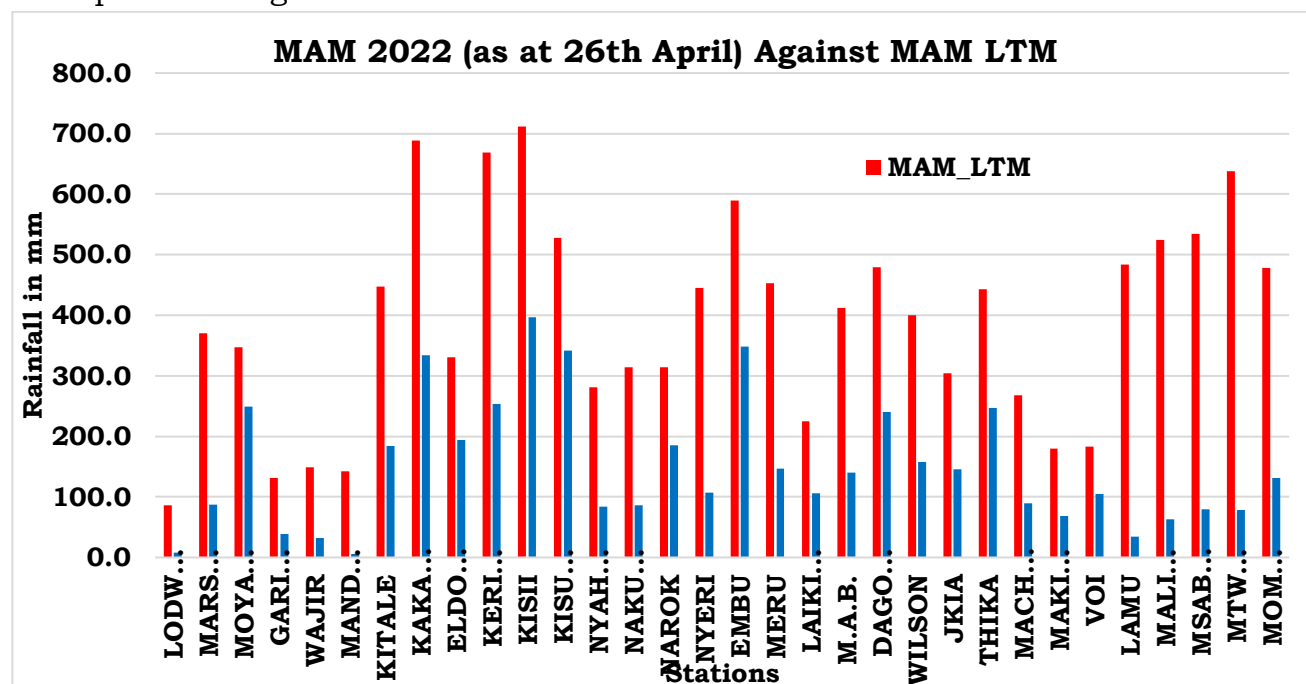


Figure 2b: April 2022 Rainfall Performance as a percentage of the April LTM



### 3.3. MARCH-MAY SEASONAL RAINFALL PERFORMANCE UP TO APRIL 26<sup>TH</sup> 2022

Analysis of March-May 2022 seasonal rainfall indicates that all Meteorological stations in the country have so far received depressed rainfall. By 28th April, the highest amount of 396.7mm (55.7% of MAM LTM) was recorded in Kisii station. This was followed by Embu with 348.0mm (59.1%). Other stations that recorded above 300mm are Kisumu and Kakamega that recorded 341.5mm and 333.9mm respectively. Kericho, Moyale, Thika and Dagoretti had recorded 253.1mm, 248.7mm, 246.9mm and 240.3mm respectively. All the other stations had recorded less than 200mm with Lodwar and Mandera having recorded 7.5mm and 5.9mm respectively as depicted in Figure 4 below.



## 4. EXPERIENCED IMPACTS OF APRIL 2022

### 4.1. Agriculture and Food Security

The long dry spell during the first half of the month provided conducive ground for the moths of the African armyworms and fall armyworms to lay and hatch eggs which developed into larvae and fed on crops over parts of the Highlands West and East of the Rift Valley, the Lake Victoria Basin and the Southern Rift Valley. The worms invaded farms and destroyed crops leading to huge losses as some farmers had to replough and replant.

### 5.2. Disaster Risk Management

Reported weather-related disasters in April:

- A man was struck and killed by lightning in Wumingu Matasenyei village in Taita Taveta County on 23<sup>rd</sup> April 2022.
- Two members of the same family were also killed by lightning in Malaha village Bungoma County on 17<sup>th</sup> April.
- About 80 livestock were killed by flash floods in Baringo County on 17<sup>th</sup>

April following heavy rains that pounded the area.

- A man drowned as he attempted to cross the flooded river Holale in Moyale, Marsabit County on 17<sup>th</sup> April after heavy rains pounded the area.
- Several houses and a health center were destroyed and foodstuffs, livestock, and farm equipment were carried away in several villages in Taveta Sub County following heavy rains that pounded the area on 23<sup>rd</sup> and 24<sup>th</sup> April.
- A house was destroyed in Ndile village, Taita Taveta County after strong winds were experienced over the region on 19<sup>th</sup> April.

### **5.3. Transport and Public Safety**

- Part of the Kitobo- Taveta road was swept away by floods following heavy rains that pounded the area between 22<sup>nd</sup> and 24<sup>th</sup> April 2022.
- A foot bridge that connects nine villages in Baringo was swept away by flash floods on 17<sup>th</sup> April after a heavy downpour that lasted for over seven hours.

### **5.4. Environment**

Heavy rains caused severe soil erosion in Msawau Mwangea in Taita Taveta County on 22<sup>nd</sup> April 2022.

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



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**DIRECTOR OF METEOROLOGICAL SERVICES**