REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY

STATE DEPARTMENT FOR ENVIRONMENT AND CLIMATE CHANGE

KENYA METEOROLOGICAL DEPARTMENT

RAINFALL OUTLOOK FOR THE OCTOBER-NOVEMBER-DECEMBER (OND) 2025 SHORT-RAINS SEASON; AND REVIEW OF THE JUNE-JULY-AUGUST (JJA) 2025 RAINFALL SEASON

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1. HIGHLIGHTS

1.1 Rainfall Outlook for the October-November-December (OND) 2025 "Short Rains" Season.

The Climate Outlook for the October–December 2025 "Short Rains" season indicates that most parts of the northeast and Southeastern lowlands and Coastal region are expected to receive below average rainfall. The South and Central Rift Valley, most of the Lake Victoria region, parts of the Highlands East of the Rift Valley including Nairobi county, isolated parts over Southeastern lowlands (Kajiado) and western parts of Samburu and Marsabit counties are expected to receive near to below average rainfall. The Highlands West of the Rift Valley and parts of Northwestern are likely to receive near to above average rainfall.

The main driver of this outlook is the difference in sea surface temperatures between the eastern and western equatorial Indian Ocean, commonly referred to as the Indian Ocean Dipole (IOD), which is currently developing into a negative phase and is expected to persist from September to November 2025 before returning to neutral in December. A negative IOD typically brings **drier than normal conditions over East Africa**, potentially suppressing rainfall during the short rains.

According to the most recent update issued on 2nd September 2025 by the World Meteorological Organization (WMO), there is about a 55% chance of La Niña developing during September–November 2025, rising to 60% in October–December 2025. The Kenya Meteorological Department (KMD) will continue to closely monitor ENSO conditions.

The distribution of rainfall is expected to be **poor**, with **prolonged dry spells** and **isolated storms** in some areas. Temperatures are forecasted to be **warmer than average** over most parts of the country, except in a few areas of the western sector where **near to cooler than average temperatures** are likely. Higher probabilities for **warmer than average temperatures** are expected over the central and eastern regions.

1.2 Review of the Rainfall and Temperature in June-July-August (JJA) 2025

The June–July–August (JJA) 2025 season in Kenya was marked by strong climatic contrasts. Western, coastal, and central parts of the country experienced near to above-average rainfall, while the eastern and northeastern regions remained predominantly dry. Temperatures were generally warmer than average nationwide, with notably elevated nighttime conditions. However, high-altitude areas, including the Central Highlands and Nairobi, experienced

All correspondence should be addressed to the Director of Meteorological Services
Kenya Meteorological Department, Dagoretti Corner, Ngong Road | P.O. Box 30259-00100, Nairobi, Kenya
Telephone: +254 20 3867880-5, +254 724 255154
E-mail: director@meteo.go.ke | Website: https://www.meteo.go.ke

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pronounced cold spells during July and a significant cold event in mid-August, when daytime temperatures dropped sharply across much of the country.

2. RAINFALL OUTLOOK FOR OCTOBER-NOVEMBER-DECEMBER (OND) 2025 "SHORT-RAINS" SEASON

The "Short Rains" October-November-December (OND) season constitutes an important rainfall season in Kenya, particularly in the Central and Eastern regions of the country as shown in **Figure 1b.**

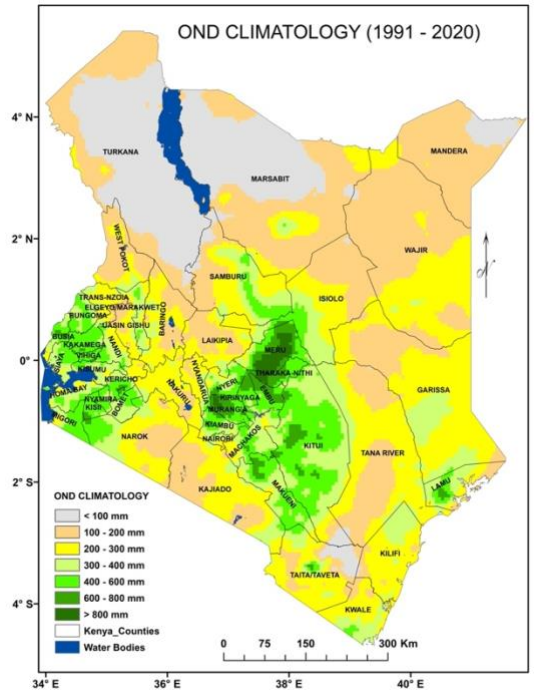


Figure 1a: October to December Rainfall Climatology

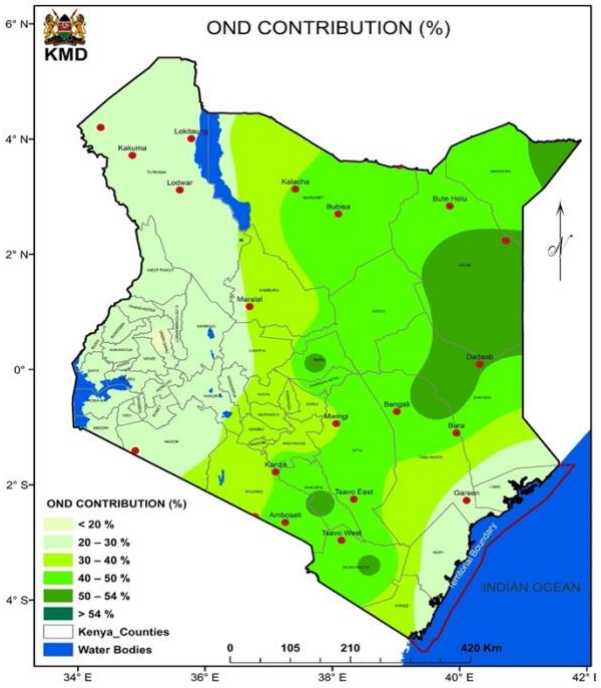


Figure 1b: OND contribution to Annual Rainfall

The Climate Outlook for the October–December 2025 "Short Rains" season indicates that most of the northeast and Southeastern lowlands and Coastal region are expected to receive below average rainfall. The South and Central Rift Valley, most of the Lake Victoria region, parts of the Highlands East of the Rift Valley including Nairobi county, isolated parts over Southeastern lowlands (Kajiado) and western parts of Samburu and Marsabit counties are expected to receive near to below average rainfall. The Highlands West of the Rift Valley and parts of Northwestern are likely to receive near to above average rainfall. (**Figure 1c**)

In **Figure 1c**, the areas projected to receive **near-average rainfall with a tendency toward above-average** amounts are depicted in **light green**. Regions expected to receive **near-average rainfall with a tendency toward below-average** amounts are shown in **yellow**. Meanwhile, the areas forecasted to experience **below-average (depressed)** rainfall are highlighted in **orange.**

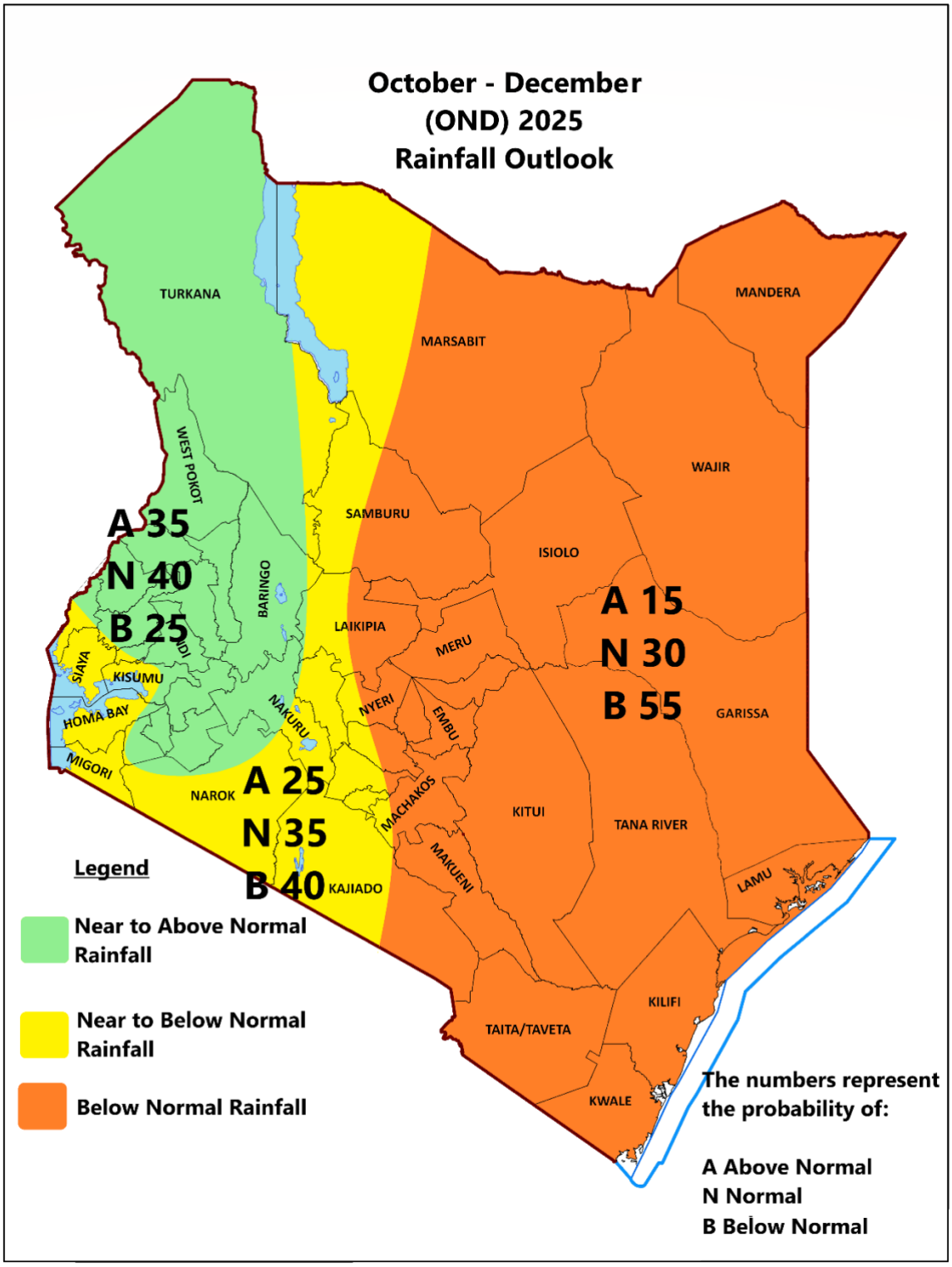


Figure 1c: OND 2025 Rainfall Outlook

The specific outlook for October-November-December (OND) 2025 is as follows:

2.1 The Highlands West of the Rift Valley (Kisii, Nyamira, Trans Nzoia, Uasin Gishu, West Pokot, Elgeyo Marakwet, Nandi, Kericho, Bomet, Kakamega, Vihiga, Bungoma and the western parts of Baringo): The expected rainfall is likely to be near to slightly above the long-

term average amounts for the season. The distribution of rainfall is likely to be fair to good, with occasional storms expected.

2.1 The Lake Victoria Basin: (Siaya, Kisumu, Homa Bay, Migori and Southern parts of Busia): The expected rainfall is likely to be near to slightly below the long-term average amounts for the season except in northern parts of **Busia** where near to slightly above average rainfall is expected. The distribution of rainfall is likely to be poor to fair, with occasional storms expected.

2.1 The Central and South Rift Valley: (Nakuru, Narok and parts of Baringo): The expected rainfall is likely to be near to slightly below the long-term average amounts for the season. The distribution of rainfall is likely to be poor to fair, with occasional storms expected.

2.2 Northwestern (Turkana County): These areas are likely to receive occasional rainfall that is expected to be near to slightly above the long-term average amounts for the season. However, prolonged dry spells are likely. The rainfall is expected to be poorly distributed both spatially and temporally.

2.3 Northwestern (Samburu county): These areas are likely to receive occasional rainfall that is expected to be near to below the long-term average amounts for the season over western Samburu and below average over the rest of the county. Prolonged dry spells are likely and the rainfall is expected to be poorly distributed both spatially and temporally.

2.4 Highlands East of the Rift Valley Counties (including Nairobi area): (Nairobi, Nyeri, Kirinyaga, Murang'a, Kiambu, Meru, Nyandarua, Embu, Tharaka Nithi)**:** These counties are likely to experience rainfall with some breaks (dry spells) during the season. The cumulative rainfall amounts are anticipated to be near to below the long-term average for the season in Nairobi, Kiambu, Nyandarua, parts of Murang'a and Nyeri and below average over the remaining parts. The rainfall distribution is likely to be poor to fair both in time and space with a possibility of occasional storms.

2.5 South-eastern Lowlands Counties (Kitui, Makueni, Taita Taveta, Southeastern Kajiado, Tana River and central and eastern Machakos): These counties are expected to experience intermittent rainfall throughout the season. However, the total rainfall amounts are likely to be below the long-term average for the season. Prolonged dry spells are also likely and the rainfall is expected to be poorly distributed both space and time.

2.6 North-Eastern Counties (Mandera, Wajir, Garissa, Isiolo and eastern parts of Marsabit): These areas are expected to experience occasional rainfall during the season. However, the total rainfall amounts are likely to be below the long-term average for the season. Prolonged dry spells are also likely, with the rainfall expected to be poorly distributed both spatially and temporally.

2.7 The Coastal Counties (Mombasa, Kilifi, Lamu, Kwale and Coastal Tana River): These counties are expected to receive rainfall with intermittent breaks during the season. However, the total rainfall amounts are likely to be below the long-term average for the season. Prolonged dry spells are also likely, with the rainfall expected to be poorly distributed both spatially and temporally.

3. EXPECTED DISTRIBUTION OF THE OND RAINFALL, ONSET AND CESSATION DATES

3.1 Distribution

The predicted onsets, cessations, and distribution of rainfall were derived from dynamical models and statistical analysis of the past year, which showed similar characteristics to the current year, and are as indicated in Table 1.

The analogue (similar) year chosen was 2021. The rainfall outcomes for this analogue year are for reference only and should not be interpreted as part of the forecast. Rather, they provide a sense of the rainfall outcomes that can occur given broadly similar global climate conditions.

The OND 2025 rainfall is expected to be poorly distributed, both in time and space over several parts of the country. The western sector is expected to have a fair to good distribution while the central sector is expected to have a poor to fair distribution. The rest of the country is expected to have a poor distribution. This season will be marked by prolonged dry spells and occasional isolated storms, even in regions where **depressed rainfall (below average)** is forecasted.

3.2 Onset and Cessation

The expected onset and cessation dates for the Counties are as indicated in ***Table 1*** and ***Figure 2*** below:

Table 1: Expected Onset and Cessation for the OND 2025 Rains

Counties	ONSET	CESSATION	DISTRIBUTION
Western Counties (Busia, Vihiga, Kakamega, Bungoma); Nyanza Counties (Kisumu, Siaya, Homa Bay, Nyamira, Migori, Kisii); Counties in the Rift Valley; (Kericho, West Pokot, Nandi, Bomet, Uasin Gishu, Trans Nzoia, Nakuru, Elgeyo Marakwet, Baringo)	Rainfall Continues from September, 2025.	3rd to 4th week of December, 2025.	Fair to good
Counties in Central Kenya (Kirinyaga, Nyeri, Murang'a, Nyandarua, Laikipia Kiambu, Meru, Embu, Tharaka Nithi); Nairobi;	3rd to 4th week of October, 2025.	3rd to 4th week of December, 2025.	Poor to Fair
Counties in North Western (Turkana, Samburu)	Undefined with occasional rainfall spreading from September	Undefined	Poor
Coastal Strip (Kwale, Mombasa, Kilifi, Lamu, Coastal part of Tana River)	3rd to 4th week of November, 2025 with occasional rainfall in October	3rd to 4th week December.	Poor

South Rift Valley: (Narok)	4th week of October to 1st week of November, 2025. (with occasional rainfall spreading from Sep)	Rainfall continues into January 2026	Poor to fair
Northeastern Counties (Mandera, Wajir, Garissa, Marsabit, Isiolo)	Undefined	Undefined	Poor
Southeastern lowlands (Machakos, Makueni, Kitui, Taita Taveta, Kajiado, Tana River)	3rd to 4th week of November, 2025.	3rd to 4th week of December.	Poor

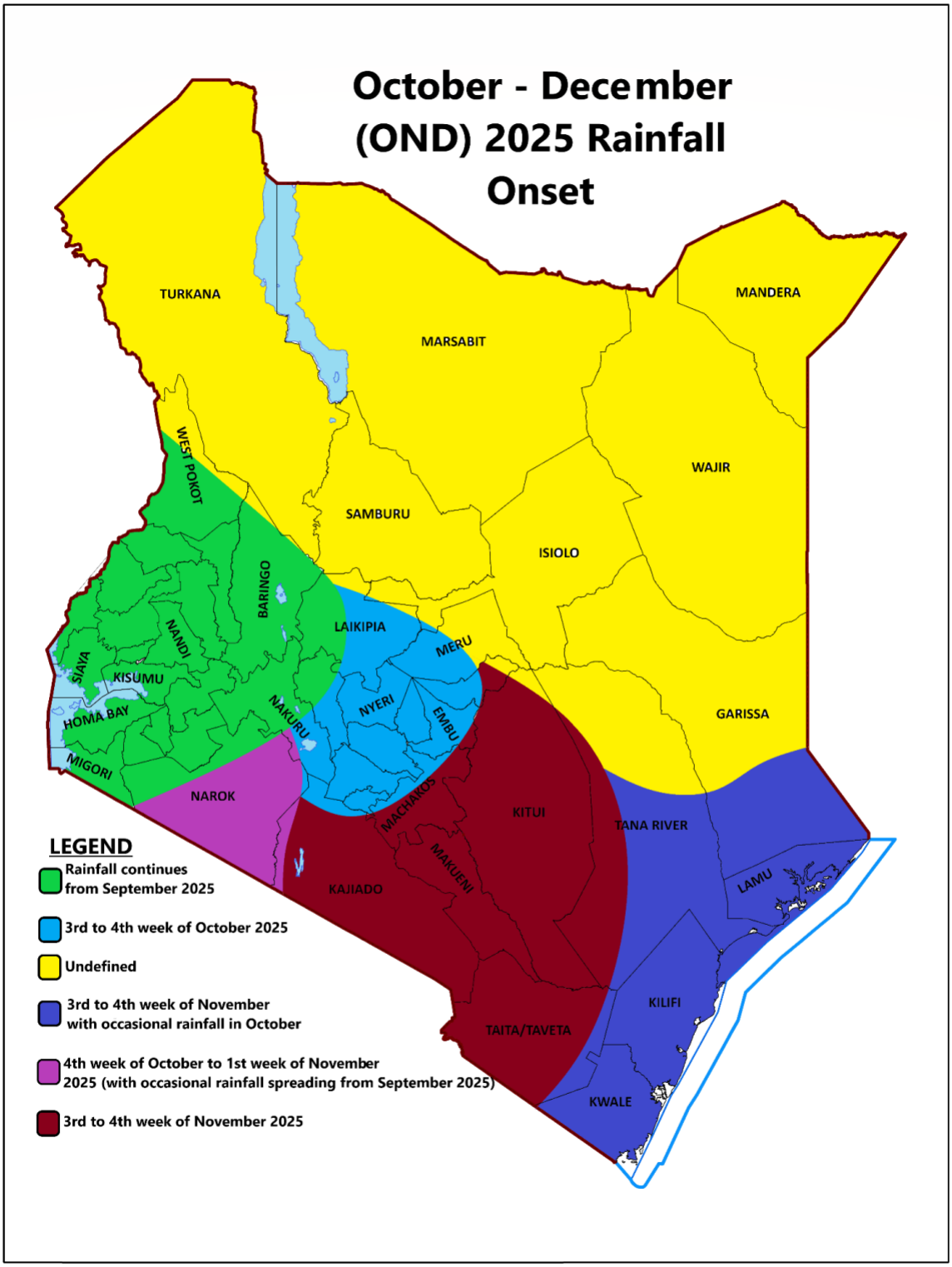


Figure 2: OND 2025 Rainfall Onset

NB: Updates on the onset, distribution, and cessation of rainfall will be provided regularly through weekly, monthly forecasts as the season approaches. These updates will offer detailed insights into any changes and developments in rainfall patterns to keep stakeholders informed and support timely decision-making.

4 Standardized Precipitation Index (SPI) forecast

In order to contextualize the expected rainfall deficit with respect to past OND seasons and provide an easy assessment of the severity of the expected scenario, the rainfall forecast has been expressed as standard deviations from the mean using the standard deviation index (SPI). SPI a tool used to track drought. It works by comparing the amount of rainfall over a specific period to the long-term average for that location. The resulting value indicates how much a given period deviates from normal conditions.

A probabilistic forecast of SPI can provide advance warning by indicating the chance of the various parts of the country either sliding into or recovering from the alert or the alarm worsening phases of the national drought early warning system. The national drought early warning system uses SPI < -0.09 and SPI < -0.98 thresholds for the alert and alarm worsening phases respectively. The forecast probabilities for the two scenarios are shown in **figures 3a** and **3b** below.

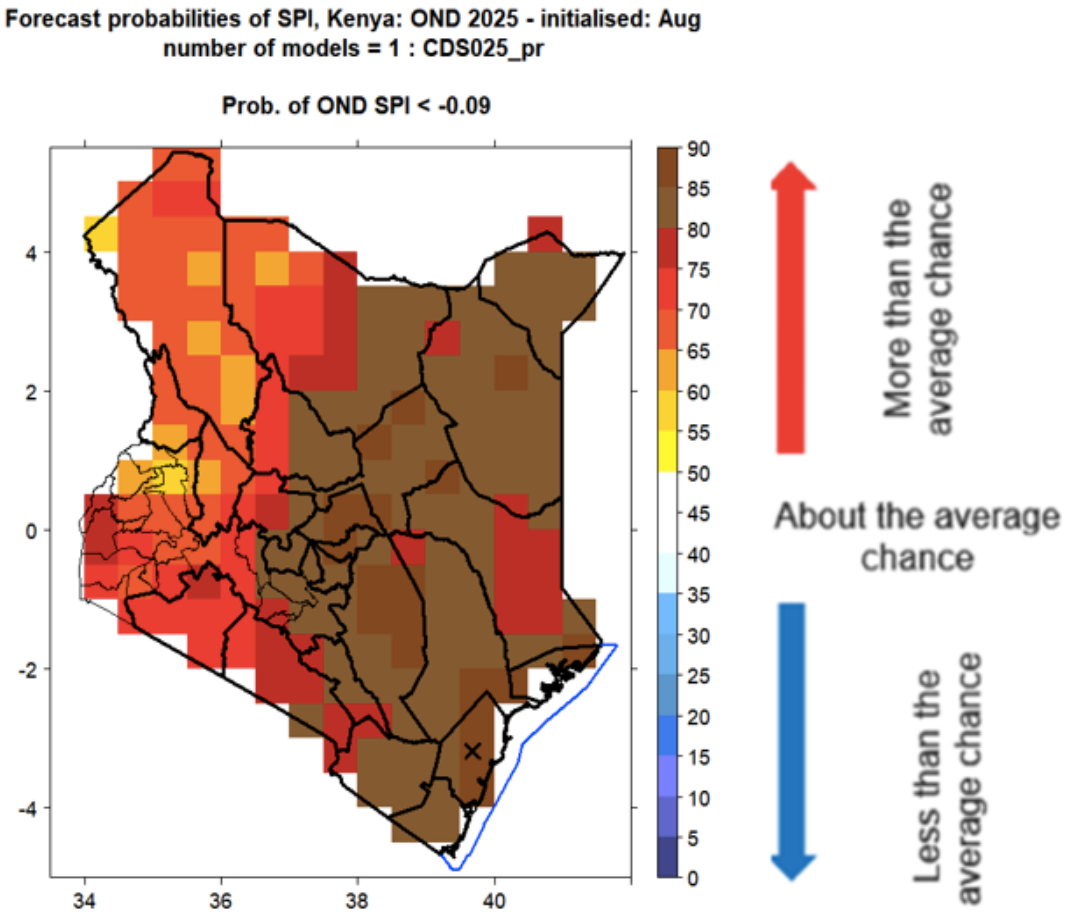


Figure 3a: Forecast probability of the country likely to get into the alert phase

The average chance of SPI<-0.09 occurring is 46% but the forecast indicates a high probability of between 55% to 90% over much of the country which is 1 to 2 times more likely than climatology. The chance of the event unfolding is still much higher over the eastern and central parts of the country.

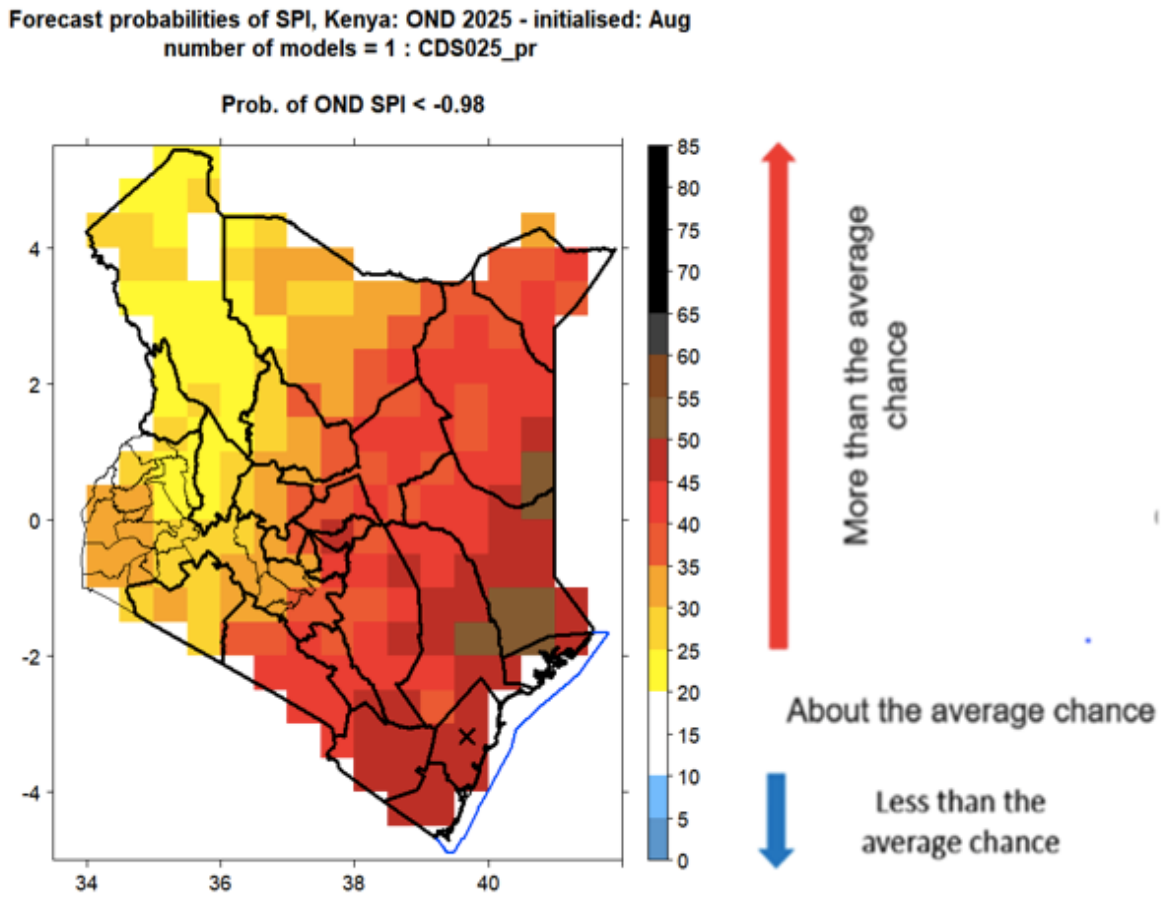
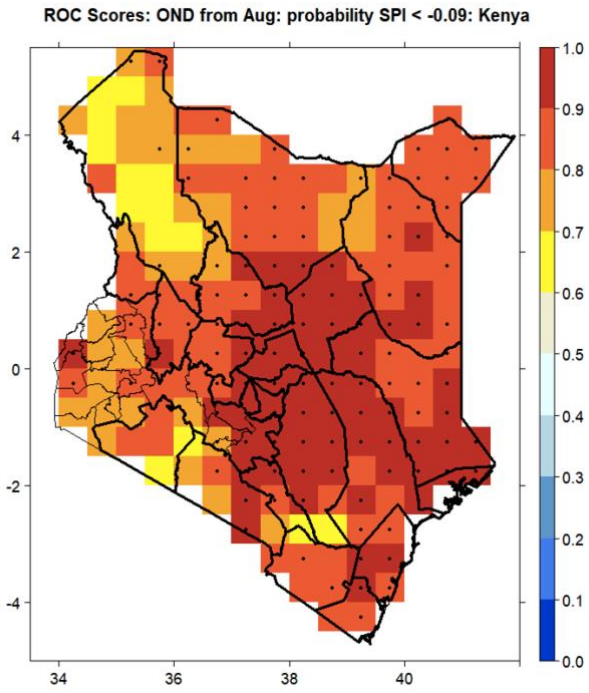


Figure 3b: Forecast probability of the country likely to get into the alarm worsening phase

The average chance of SPI<-0.98 is 16%. The forecast probabilities are between 20% and 55% and they are higher over the eastern parts of the country. This indicates that there is still a high chance of the eastern parts of the country experiencing severe rainfall deficits during the OND season.

Skill of the forecast

The skill of both SPI -0.09 and -0.98 for forecasts initialized in August is quite good over much of the country except that of -0.98 over parts of the south eastern low lands as shown by the ROC scores in **figure 3c and 3d** below.



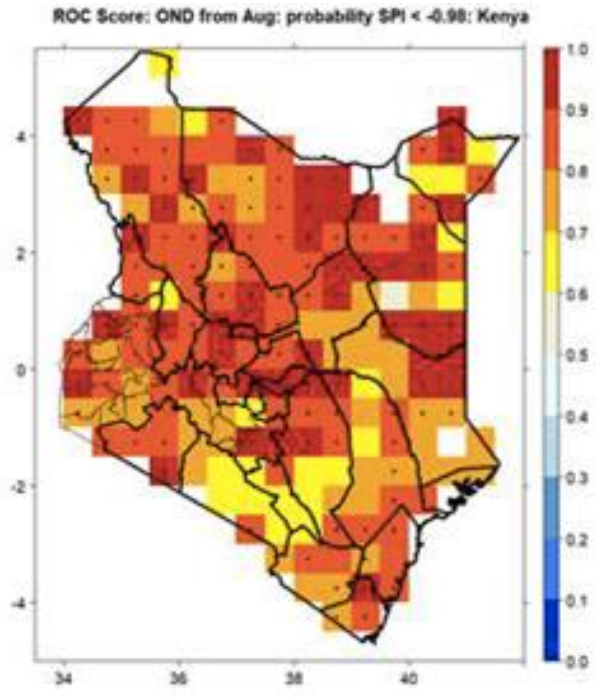


Figure 3 :(c) ROC scores for SPI -0.09 (d) ROC scores for SPI -0.98

These forecasts show that the expected deficit in rainfall over the eastern sector of the country is likely to cause a slide into the alert phase of the drought early warning system which might progress to the alarm worsening phase as the season progresses.

All correspondence should be addressed to the Director of Meteorological Services
Kenya Meteorological Department, Dagoretti Corner, Ngong Road │P.O. Box 30259-00100, Nairobi, Kenya
Telephone: +254 20 3867880-5, +254 724 255154
E-mail: director@meteo.go.ke │Website: https://www.meteo.go.ke

5 OND 2025 Temperature Outlook

The temperature outlook shows that most parts of the country are expected to be warmer than average except a few areas over the western sector where temperature is expected to be near to cooler than average. The Central and eastern parts of the country are expected to have higher probabilities for warmer than average temperature as illustrated **in figure 4.**

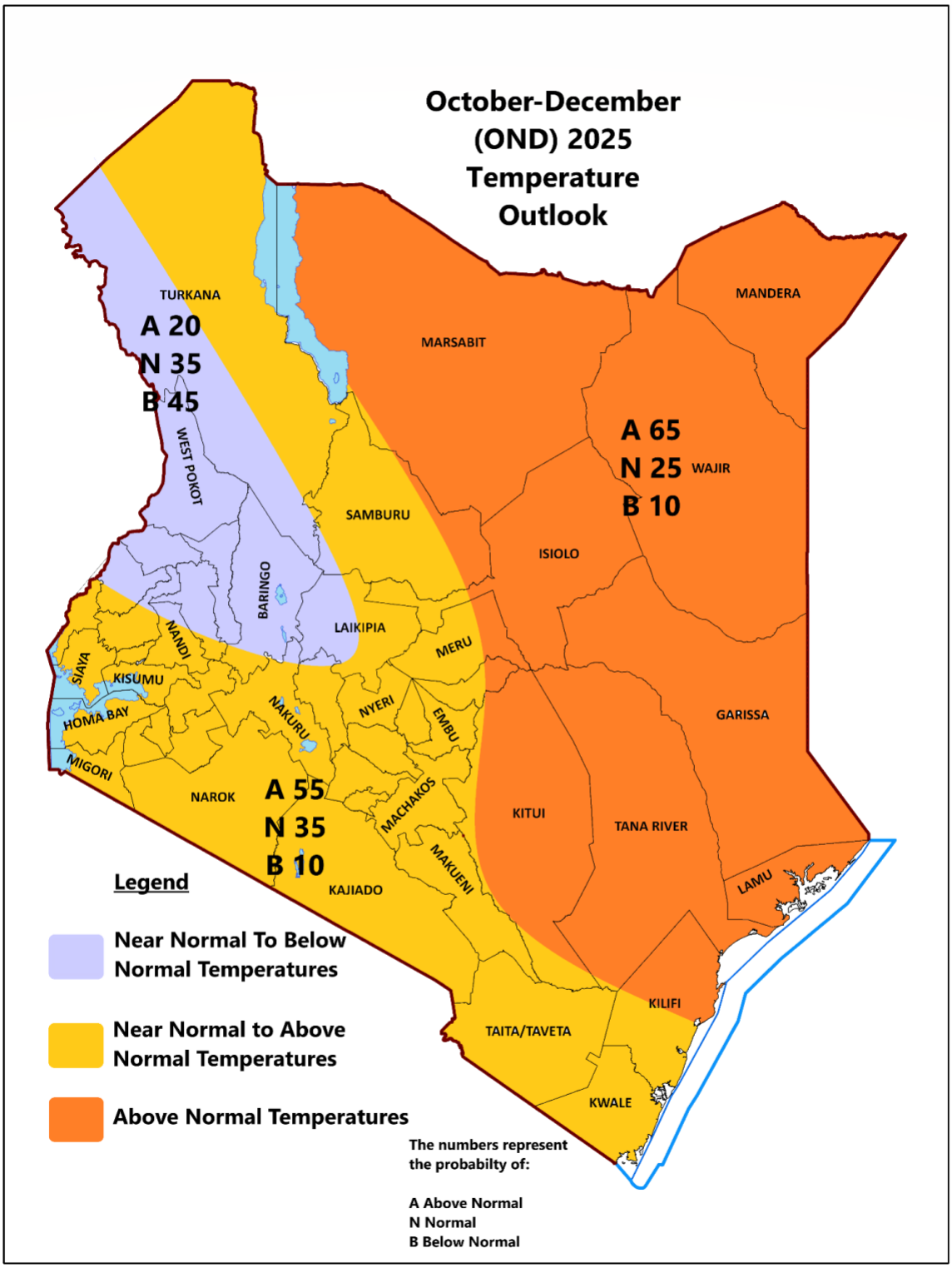


Figure 4: OND 2025 Temperature Outlook

Kenya Meteorological Department, Dagoretti Corner, Ngong Road | P.O. Box 30259-00100, Nairobi, Kenya
Telephone: +254 20 3867880-5, +254 724 255154
E-mail: director@meteo.go.ke | Website: https://www.meteo.go.ke

6 POTENTIAL IMPACTS OF THE OND 2025 RAINS

The October–December 2025 "Short Rains" season in Kenya is expected to bring mixed rainfall outcomes. Below-average rainfall is likely over the northeast, southeastern lowlands, and coastal areas, with near to below-average conditions in parts of the Rift Valley, the Lake Victoria Basin, and the Highlands East of the Rift Valley including Nairobi. In contrast, the Highlands West of the Rift Valley and parts of the northwest are expected to experience near to above-average rainfall. Rainfall distribution is likely to be uneven, with prolonged dry spells and isolated storms, while temperatures will generally be warmer than average across much of the country. The potential impacts of these conditions on key sectors are highlighted below.

a. Agriculture, Food Security and Livestock Development Sectors

Implications for the Crop Subsector

In regions where below-normal rainfall is anticipated, crop production will be negatively affected. Persistent dry spells are expected to lead to poor germination, crop failure, and reduced yields. Food scarcity may drive up the prices of staples, reduce household incomes, and increase the risk of food insecurity and malnutrition. Water availability for irrigation and domestic use will also decline, heightening competition over limited resources and potentially escalating both communal and human–wildlife conflicts.

In areas expected to experience wetter-than-normal rainfall, opportunities exist for extended growing seasons, higher yields, and improved soil moisture to support nutrient uptake. Optimal rainfall can boost agricultural productivity, improve food and nutrition security, and strengthen livelihoods through surplus commodity production. However, excessive rainfall could also lead to flooding, waterlogging, and soil erosion, reducing land fertility and delaying farming operations. The humid conditions may trigger pest and disease outbreaks, rapid weed growth, and significant pre- and post-harvest losses due to contamination and spoilage of produce.

Implications for the Livestock Subsector

For livestock keepers in below-normal rainfall regions, reduced pasture and water scarcity will pose serious challenges. Herders will be forced to travel long distances in search of water and grazing, exposing livestock to poor body condition, mortality, and reduced productivity. Overgrazing is likely to worsen land degradation, while water shortages and contaminated sources will increase the risk of disease outbreaks such as Foot-and-Mouth Disease and tick-borne illnesses. Food insecurity will worsen as livestock productivity declines, while conflicts over dwindling resources may intensify.

By contrast, livestock in wetter-than-normal rainfall regions will benefit from replenished water sources, reduced heat stress, and improved pasture conditions, lowering the likelihood of conflict over resources. Nonetheless, heavy rainfall could erode grazing lands, disrupt grazing patterns, and increase the incidence of pests and diseases such as Rift Valley Fever, posing risks to herd health and productivity.

Key Response Measures and Strategies

To cushion against risks and capitalize on opportunities, the Ministry proposes the following priority measures:

- Climate Smart Agriculture (CSA): Promotion of TIMPs (Technologies, Innovations and Management Practices) such as water harvesting, efficient irrigation, conservation agriculture, agroecology, and nature-based farming solutions.

- Water and Soil Management: Expansion of acreage in rainfall-enhanced regions, drainage improvement, desilting of canals and dams, soil conservation, and controlled grazing to preserve forage quality.

- Post-Harvest Management: Investment in grain drying, cooling, and storage facilities; surveillance of aflatoxin in grain reserves and markets; and adoption of safe handling practices.

- Input Access and Value Chains: Early acquisition of quality inputs, accelerated digital subsidy access through KIAMIS e-vouchers, and promotion of value addition to surplus produce, feeds, and fodder.

- Pest and Disease Control: Strengthened surveillance systems, timely vaccination, and preventive veterinary and crop protection services.

- Risk Communication: Dissemination of early warning advisories, market information, and seasonal guidance to farmers and pastoralists in a timely and user-friendly manner.

- Conflict and Resource Management: Promotion of community-level water harvesting, pasture conservation, and conflict resolution mechanisms in resource-scarce areas.

b. Environment and Natural Resources Sectors

Implications for Forestry and Ecosystems

In wetter-than-normal rainfall areas, forest ecosystems are expected to experience accelerated tree growth and regeneration. Adequate soil moisture will enhance seed germination, seedling survival, and natural regeneration of shrubs and grasses, restoring degraded landscapes and increasing yields of timber and poles. Enhanced soil fertility, higher carbon sequestration, and improved water infiltration will strengthen ecosystem services, contributing to climate regulation, aquifer recharge, and biodiversity conservation. Communities are likely to benefit from improved availability of fruit trees and fuelwood, better employment opportunities in forestry activities, and higher seedling survival under reforestation programs such as the "15 Billion Trees Campaign." However, heavy rainfall may also result in flooding, erosion, and landslides on deforested slopes, with potential damage to forest roads, trails, and bridges. Waterlogging could lead to tree uprooting, habitat disruption, and sedimentation of rivers and wetlands, while pests, fungal infections, and seedling rot may threaten forest health. Livelihoods dependent on timber and non-timber products may also suffer from damage and reduced accessibility.

In regions expected to experience below-normal rainfall, slowed growth and regeneration will be a major concern as drought conditions suppress photosynthesis and increase seedling mortality. Tree die-offs may result in structural changes to forests, while the accumulation of dry biomass will heighten wildfire risks, with fires threatening seed banks, mature trees, and wildlife habitats. Drought-stressed trees will also be more susceptible to pest and disease infestations, compounding degradation. Declines in river flows and water storage functions of forests will exacerbate community water shortages, while reduced carbon sequestration and

loss of habitats for moisture-dependent species will undermine biodiversity. Socially, resource scarcity may escalate conflicts, drive unsustainable exploitation of forest products, and trigger migration pressures. Reforestation and afforestation programs may face costly setbacks as seedlings fail to establish, further weakening long-term forest resilience.

Key Response Measures and Strategies

To mitigate risks and harness opportunities, the Ministry proposes the following actions:

- Reforestation and Afforestation: Scale up tree planting and restoration initiatives such as the "15 Billion Trees Campaign," emphasizing drought-tolerant species in dry areas and soil-stabilizing species in high-rainfall regions.
- Soil and Water Conservation: Implement terracing, contour planting, check dams, and slope stabilization to curb erosion and enhance water infiltration in wetter areas.
- Fire and Disaster Risk Management: Strengthen firebreak construction, controlled burning, and early warning systems for wildfires, floods, and landslides.
- Forest Health Surveillance: Enhance monitoring and control of pests and fungal infections in both wet and dry regions, with timely interventions to protect seedlings and mature trees.
- Community Engagement and Livelihoods: Support community-based forest management, promote sustainable harvesting and value addition of timber and non-timber products, and diversify income sources to reduce pressure on forests.
- Carbon and Climate Projects: Expand REDD+ initiatives, carbon farming, and ecosystem restoration projects to enhance sequestration and generate economic incentives.
- Awareness and Capacity **Building:** Conduct public education campaigns on sustainable forestry practices and strengthen the capacity of county governments and community groups in forest conservation.

c. Disaster Management Sector

Implications for Disaster Risk Management

In areas where drier-than-normal conditions are anticipated, the impacts will largely be negative. Drought conditions will heighten water scarcity, lead to crop failure and livestock distress, and trigger widespread food insecurity at household level. Scarcity of water and pasture is also likely to intensify competition among communities, fueling resource-based conflicts in agro-pastoral and pastoral areas. Public health risks will rise as limited access to clean water increases vulnerability to disease outbreaks, while children in drought-hit regions may face heightened risks of school dropouts due to migration and economic hardship.

By contrast, regions forecast to receive above-average rainfall will experience a different set of outcomes. On the positive side, improved rainfall is expected to reduce competition over natural resources, leading to a decline in resource-based conflicts and fostering greater security and social cohesion. Livelihoods are also likely to improve through enhanced agricultural and livestock productivity, which will strengthen household incomes and resilience.

However, excessive rainfall poses serious risks, including flooding in low-lying and riverine areas, destruction of infrastructure, and displacement of communities. In hilly regions, waterlogged soils may trigger landslides and mudslides, while frequent thunderstorms will increase the likelihood of lightning strikes, endangering both people and livestock. Flood-related contamination of water sources may also heighten the risk of cholera and other waterborne diseases, while stagnant pools of water could accelerate the spread of vector-borne diseases such as malaria.

Key Response Measures and Strategies

To minimize risks and capitalize on opportunities, the sector should prioritize the following measures:

- Pre-Season Preparedness: Advocate for allocation of preparedness funds by the National Treasury and mobilize support from UN agencies for county contingency plans. Pre-position food and non-food items in drought- and flood-prone counties, and update hazard maps for floods and landslides.
- Emergency Response: Activate rapid response teams for flood, drought, and landslide incidents; designate temporary relocation sites; and identify evacuation routes in high-risk areas. Promote livestock off-take and animal destocking programs in drought-prone zones, while ensuring cash transfer and feeding programs for the most affected communities.
- Community Engagement and Awareness: Strengthen dissemination of forecasts and early warning advisories via radio, SMS, and local networks. Train communities on evacuation procedures, conflict resolution, and hygiene practices to reduce health risks.
- Health and WASH Interventions: Scale up provision of safe water through water trucking, purification tablets, and hygiene promotion campaigns. Deploy health teams to flood-prone and outbreak-prone areas to enhance surveillance and response capacity.

d. Health Sector

Positive Impacts

- Reduced cases of malnutrition in areas receiving adequate rainfall due to improved food availability
- Improved water availability for domestic and health facility use in regions with sufficient rainfall.
- Cleaner environment with reduced dust, leading to lower cases of respiratory problems (e.g., asthma, eye infections) linked to dusty dry seasons.

Negative Impacts

In eastern parts extending to central regions (below-average rainfall):

- Climate-sensitive disease outbreaks (Cholera, Chikungunya, Malaria, dengue fever, Rift Valley fever).
- Water scarcity and related diseases (Trachoma, scabies), poor sanitation, and increased risk of diarrheal diseases (cholera, dysentery, typhoid).
- Malnutrition among children and increased cases of micronutrient deficiencies (e.g., anemia, stunting, wasting).

- Dry, dusty conditions leading to increased respiratory infections (asthma, bronchitis, eye infections).

In parts of Lake Victoria region, central parts, parts of North West, and eastern regions (near to below-average rainfall):

- Water scarcity is likely to lead to water washed diseases such as trachoma and scabies and water borne diseases such as Diarrheal
- Cases of malnutrition are likely to increase
- Vector borne diseases such as Ndengu fever and Chikungunya are likely to emerge over the coastal region as well as yellow fever in Isiolo

In north-western region, northern Rift Valley, and parts of southern Rift (above-normal rainfall):

- Cases of highland Malaria may increase due to excess stagnanat water creating breeding grounds for mosquitoes
- Cases of water contamination are likely leading to outbreaks of Cholera and typhoid
- There may be emergence of vector borne diseases such as Rift Valley Fever
- Health services may be disrupted due to flooding and related infrastructure damage
-

Mitigation Measures

- Epidemic preparedness and response planning (contingency plans, activation, training, prepositioning supplies, and deployment)
- Continuous distribution of LLTNs (Long-Lasting Insecticidal Nets) and malaria commodities (test kits and anti-malarial drugs)
- Sensitization of healthcare workers on case management and development/dissemination of IEC (Information, Education, and Communication) materials to the public
- Roll out of the "Epuka Uchafu Afya Nyumbani" Campaign
- Preposition emergency WASH kits, chlorine, household water treatment supplies, and rapid response teams in high-risk counties
- Enhance WASH interventions and ensure risk communication and community engagement
- Nutrition surge preparedness, including mobile outreach plans to pastoral and remote areas, and linking to food security/social protection actors
- Maintain/strengthen infectious disease surveillance and outbreak response for cholera, malaria, dengue, measles, and respiratory infections
- Ensure health facility resilience (water, IPC - Infection Prevention and Control, power) with stored potable water, handwashing stations, and IPC consumables for critical facilities
- Activate focal vector control (larval source management, IRS - Indoor Residual Spraying if appropriate) and community clean-up if vector indices increase due to pooled water

d. Water Sector

Implications Under Drier-Than-Normal Conditions

In basins such as the Athi, Tana, Ewaso Ng'iro, and Rift Valley, water scarcity is expected to intensify. Reduced aquifer recharge will heighten dependence on groundwater abstraction, leading to drying boreholes, contamination of water sources, and accelerated catchment degradation due to reduced vegetation cover. The scarcity of safe and adequate water will constrain sanitation services and raise operational costs for utilities, while rationing and intermittent supply will affect households, schools, health facilities, and businesses. Declining

availability will also drive increased competition, with conflicts emerging between upstream and downstream users, pastoralists and farmers, and even humans and wildlife competing for the same sources. During scarcity periods, allocation will be restricted to essential needs, limiting access for agriculture and industrial use.

Implications Under Wetter-Than-Normal Conditions

In contrast, basins in the western sector—notably the Lake Victoria North and Lake Victoria South—are expected to benefit from increased inflows into reservoirs, improved aquifer recharge, and enhanced groundwater replenishment. These conditions will boost soil moisture content, supporting agricultural activities and stabilizing food production. Availability of water for domestic consumption, livestock, industrial processes, and ecosystem needs will improve, while opportunities for catchment restoration through improved vegetation cover will emerge. Counties in these regions have a unique chance to invest in water harvesting, recharge, and storage infrastructure to secure long-term resilience against future dry spells.

Impacts on Water Services

Service delivery will diverge sharply across the country. In areas with normal to below-normal rainfall, water utilities will struggle with reduced supply, high operational costs, and declining sanitation services. Rural and peri-urban households will face disrupted or rationed supply, exacerbating health and livelihood risks. Conversely, in regions with above-normal rainfall, reliable access will be maintained, and the improved recharge of aquifers and reservoirs will contribute to long-term sustainability of water services, offering stability across multiple sectors.

Key Response Measures and Strategies

To minimize risks and leverage opportunities during OND 2025, the following measures are recommended:

- Water Conservation and Demand Management: Promote efficient water use, recycling, and reuse in drought-prone regions, with priority allocation to households, schools, and health facilities.
- Groundwater and Catchment Management: Control groundwater abstraction, promote artificial recharge, and restore degraded catchments through afforestation, soil conservation, and sustainable land management.
- Conflict Resolution: Develop and operationalize frameworks for managing disputes between water users, including upstream–downstream, pastoralist–farmer, and human–wildlife interactions.
- Water Storage and Infrastructure: Expand rainwater harvesting, repair boreholes and dams, and preposition storage tanks and trucking services in critical areas to manage both scarcity and surplus.
- Utility Operations: Optimize efficiency to reduce operational costs while maintaining supply continuity in stressed regions.

- Early Warning and Community Engagement: Strengthen hydro-meteorological monitoring and disseminate timely advisories to water user associations and communities to guide planning and conservation actions.

e. Energy Sector

The October–December 2025 forecast indicates wetter-than-normal conditions over the western parts of the country and drier-than-normal conditions across the eastern and coastal regions. These rainfall variations will have diverse effects on electricity generation, transmission and distribution, and biomass energy, creating both opportunities and challenges. While the western region is expected to benefit from improved hydroelectric power generation and biomass fuel regeneration, the sector also faces risks from flooding, sedimentation, and infrastructure damage. In the eastern and coastal regions, reduced rainfall may constrain hydro generation and biomass supply, raising the importance of diversification and energy efficiency.

Impacts on Electricity Generation

In the western region, increased rainfall will raise water levels in hydro dams, supporting improved and consistent hydroelectric power generation. However, efficiency may be compromised by increased sediment load in reservoirs. Persistent cloud cover is also likely to reduce the output of home solar systems. In the eastern and coastal regions, drier conditions will lower water availability for hydroelectric generation, threatening overall energy supply stability.

Impacts on Transmission and Distribution

Above-normal rainfall in the west poses risks to electricity infrastructure. Heavy rains and storms may damage power distribution lines and poles, while flooding in low-lying areas could disrupt operations of substations. These impacts increase the likelihood of supply interruptions, especially in flood-prone regions.

Impacts on Biomass Energy

Vegetative regeneration in the western region will increase the availability of biomass fuels, improving household cooking energy security. In contrast, reduced rainfall in central, eastern, and coastal regions will lower biomass production, leading to shortages of firewood and charcoal and raising pressure on existing vegetation resources.

Key Response and Mitigation Strategies

To reduce risks and harness opportunities, the following measures are recommended:

- Real-Time Monitoring: Track dam levels and sediment accumulation in reservoirs to safeguard hydro efficiency.
- Infrastructure Resilience: Carry out routine checks and strengthen substations and distribution lines in flood-prone areas.
- Water Management: Implement conservation and optimize dam water use to balance hydro generation and competing needs.

- Diversification: Scale up geothermal, wind, and solar power to reduce reliance on rainfall-driven hydropower.
- Energy Efficiency: Promote the adoption of energy-efficient appliances, including improved cookstoves, to ease biomass dependence.
- Catchment Restoration: Support tree planting and vegetation regeneration programs to enhance long-term biomass availability.
- Contingency Planning: Prepare grid stability measures and rapid response protocols for extreme weather events.
- Early Warning Systems: Strengthen monitoring and dissemination to protect energy infrastructure from weather-related disruptions.

7 Media

When reporting on the OND 2025 seasonal forecast, the media should emphasize that although many areas may experience depressed rainfall, the impacts will vary across regions. Coverage should highlight key rainfall and temperature patterns, regional differences, and the possibility of occasional storms. Context from historical seasons, clear communication of forecast uncertainty, and regular updates from KMD and County Directors of Meteorology are essential. Reporting should also address likely impacts on agriculture, water, and health, while offering practical preparedness advice. Accurate, non-sensational coverage—supported by expert insights, visual aids, and translation for local communities—will help ensure timely and effective dissemination of climate information to the last mile.

- Prioritize weather and climate stories in editorial planning and programming
- Develop localized content in local languages through the CDMS
- Create diverse story formats (news, features, documentaries, radio dramas, talk shows) for different audience segments
- Establish regular communication channels with meteorological experts and sector specialists
- Conduct training for media personnel and sign language interpreters on effective climate communication
- Organize community engagements and barazas with county meteorology directors and traditional forecasters
- Facilitate cross-sectoral coverage including agriculture, livestock, health, education, water, and energy
- Develop follow-up stories on early warning and preparedness measures with local authorities
- Promote media inclusivity and ensure information reaches the last mile
- Coordinate with line ministries to provide timely, actionable information for communities

Positive Impacts:

- Opportunity to provide life-saving early warning information to communities across different regions
- Ability to broadcast agricultural advisories that can help farmers maximize production in high-rainfall areas
- Platform to promote climate adaptation strategies and water harvesting techniques
- Capacity to facilitate cross-sectoral dialogue between experts, officials, and communities

- Opportunity to document and share indigenous knowledge alongside scientific forecasts through community engagements

Negative Impacts:

- Potential spread of misinformation if weather information is not accurately communicated
- Difficulty in accessing meteorological experts and sector specialists for accurate information
- Challenges in reaching remote and vulnerable communities with tailored climate information
- Risk of creating panic or confusion if forecasts are not properly contextualized
- Limited capacity among media personnel to effectively communicate technical climate information

8.2 JUNE TO AUGUST 2025 SEASON

8..2.1 JUNE TO AUGUST RAINFALL REVIEW

The month of June was relatively dry in many parts of the country. However, the Highlands West of the Rift Valley, the Lake Victoria Basin, the Central and South Rift Valley, and the Coastal strip experienced significant rainfall. The Coastal region received above-average rainfall, while the western highlands, Lake Victoria Basin, and Central/South Rift Valley recorded near- to above-average rainfall—with exceptions in Kisii, Kisumu, and Nakuru where below-average amounts were observed.

The Highlands East of the Rift Valley, including Nairobi, and parts of the Southeastern lowlands (Machakos, Kajiado) remained mostly dry, with intermittent cool, cloudy conditions and occasional light rains. Rainfall here was near the June LTM in Nyahururu and most of Nairobi, but below average in Moi Air Base (MAB) and much of the eastern highlands. The Northeast, Northwest, and most of the Southeastern lowlands received little to no rainfall, except for Garissa, Wajir, and Voi, which recorded above-average rainfall.

- Wettest stations: Malindi (258.4 mm), Lamu (233.2 mm), and Kakamega (214.1 mm).
- Dry stations: Lodwar, Mandera, Makindu, and other northern/southeastern sites reported no rainfall.

July was drier than June, though the Highlands West of the Rift Valley, parts of the Lake Victoria Basin, the Central and South Rift Valley, the Coast, and isolated highland areas east of the Rift received substantial rainfall.

Rainfall was near- to above-average in the western highlands and central Rift Valley, while the Lake Victoria region (Kisumu) and South Rift (Narok) reported below-average rainfall. The Coastal region was mostly below average, apart from Malindi which remained above average.

Cool and cloudy conditions with occasional light rainfall prevailed over Nairobi, the central highlands, high-altitude areas of Marsabit, and parts of the southeastern lowlands near Nairobi. The Northeast, Northwest, and most southeastern lowlands were generally dry, though parts of Turkana and Samburu received occasional showers.

- Wettest stations: Eldoret (383.2 mm), Iranda (299.9 mm), Kakamega (291.2 mm)
- Other high totals included Kilibwoni (233.7 mm), Kitale (229.6 mm), Kapenguria (213.4 mm), Tegla Lorupe (209.8 mm), Eldoret Airport (200 mm).

- Heavy daily falls >50 mm were recorded in Trans Nzoia, Kakamega, Bungoma, and Busia.

August was characterized by dry weather over much of the country, but significant rainfall was observed in the Highlands West of the Rift Valley, the Central Rift Valley, the Northwest, and parts of the Coast, Lake Victoria Basin, South Rift, and Highlands East (including Nairobi).

Rainfall was above average in northwestern Kenya, central Kenya including Nairobi, Lake Victoria Basin, and the South Rift Valley, while near to below average conditions were recorded in the western highlands, Central Rift, and Coast. Nyahururu experienced near-average rainfall. Most of the Northeast and Southeastern lowlands remained dry, with isolated light showers.

- Wettest stations: Kapsabet Prison (242.3 mm), Eldoret Airport (186.5 mm), Mukakula (185.1 mm), Miwani Boys (166.6 mm), St. Catherine Girls (165.2 mm), Kibabii University (156.6 mm), Kericho (153.9 mm), Butere (148.9 mm), Sipili (148.0 mm), Kisumu (144.2 mm).
- Heavy daily totals included St. Catherine (69.7 mm) and Kapkatet (49 mm) in West Pokot on 7th August.
- KMD issued an advisory on 16th August warning of heavy rains.

Seasonal Overview (JJA 2025)

- Western Kenya (Highlands West of Rift Valley, Lake Victoria Basin, Central/South Rift): Overall near- to above-average rainfall, with Eldoret (684.2 mm), Kakamega (656 mm), Kitale (553.9 mm), and Kericho (542.5 mm) recording the highest seasonal totals.
- Coastal Region: Generally wet, led by Malindi (431.2 mm), Lamu (353.9 mm), Msabaha (314.4 mm), and Mtwapa (269.6 mm). Mombasa also recorded 231.1 mm.
- Central Highlands and Nairobi: Mostly cool, cloudy with light rainfall, near-average in some places (Nyahururu 245.7 mm, Embu 129.8 mm, Dagoretti 117.2 mm, Wilson 110 mm), but below average in others (JKIA 71 mm, MAB 87.6 mm).
- Northeast & Northwest: Predominantly dry (Mandera 0.3 mm, Wajir 5.1 mm, Moyale 24.9 mm, Lodwar 44.6 mm), though Garissa (21.1 mm) recorded above-average rainfall in June.
- Southeastern Lowlands: Remained extremely dry throughout, with stations like Makindu (2.7 mm), Machakos (14 mm), Voi (8.2 mm) recording minimal totals.

Key Drivers:

- Neutral ENSO conditions persisted in June, July and August.
- A warmer-than-average Indian Ocean and occasional eastward extension of the Congo air mass enhanced rainfall over western and central Kenya.
- Cool and cloudy conditions dominated much of central Kenya due to seasonal influences.

Figure 5a shows the JJA 2025 Rainfall Totals. **Figure 5b** shows the JJA 2025 totals **(in blue bars)** in comparison to JJA LTMs **(in red bars).**

Rainfall as % of LTM / Range	Description
< 75%	Below Normal (Depressed) rainfall
75% and 125%	Near normal rainfall

> 125%	Above Normal (Enhanced) rainfall

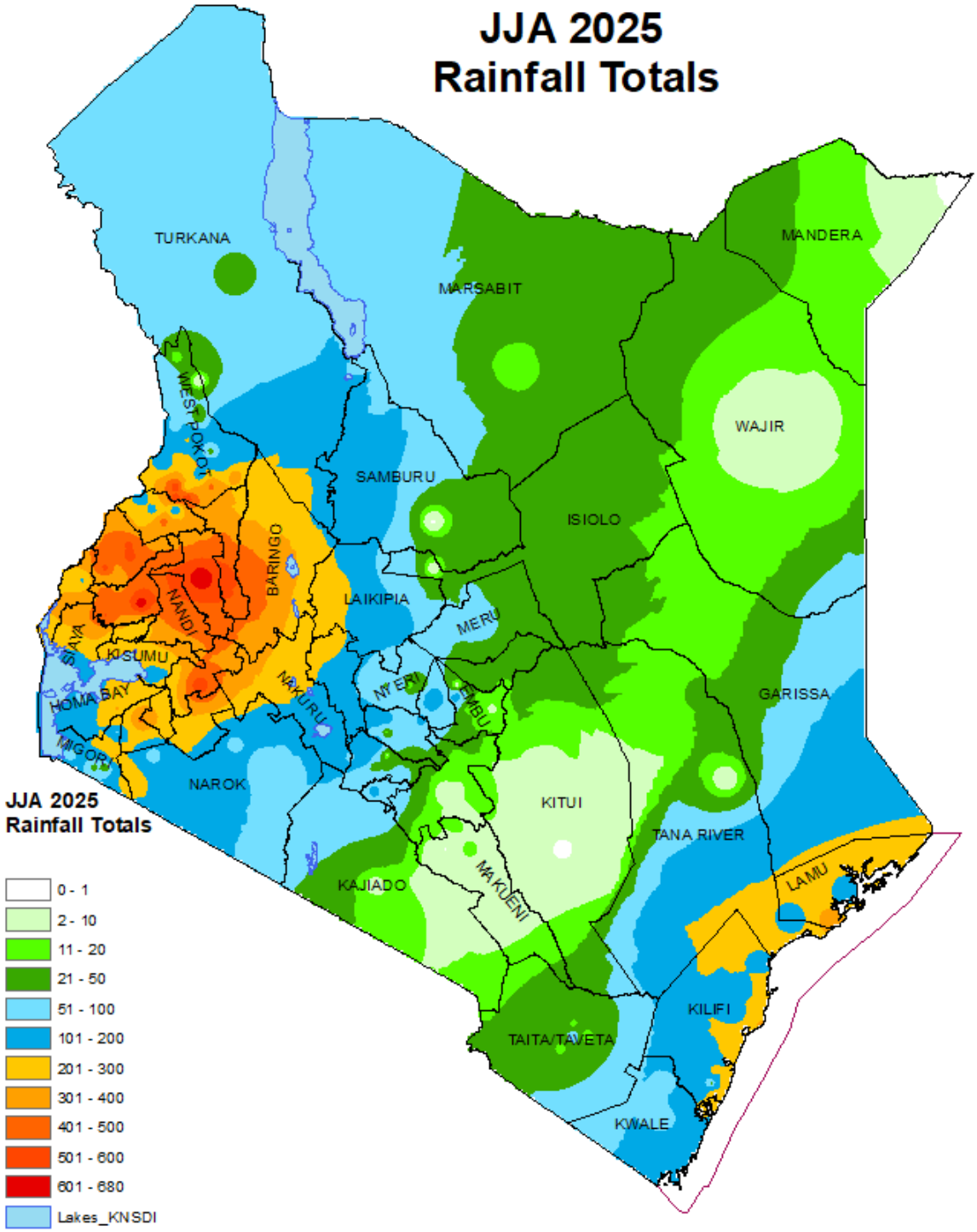


Figure 5a: JJA 2025 Rainfall Totals

All correspondence should be addressed to the Director of Meteorological Services
Kenya Meteorological Department, Dagoretti Corner, Ngong Road | P.O. Box 30259-00100, Nairobi, Kenya
Telephone: +254 20 3867880-5, +254 724 255154
E-mail: director@meteo.go.ke | Website: https://www.meteo.go.ke

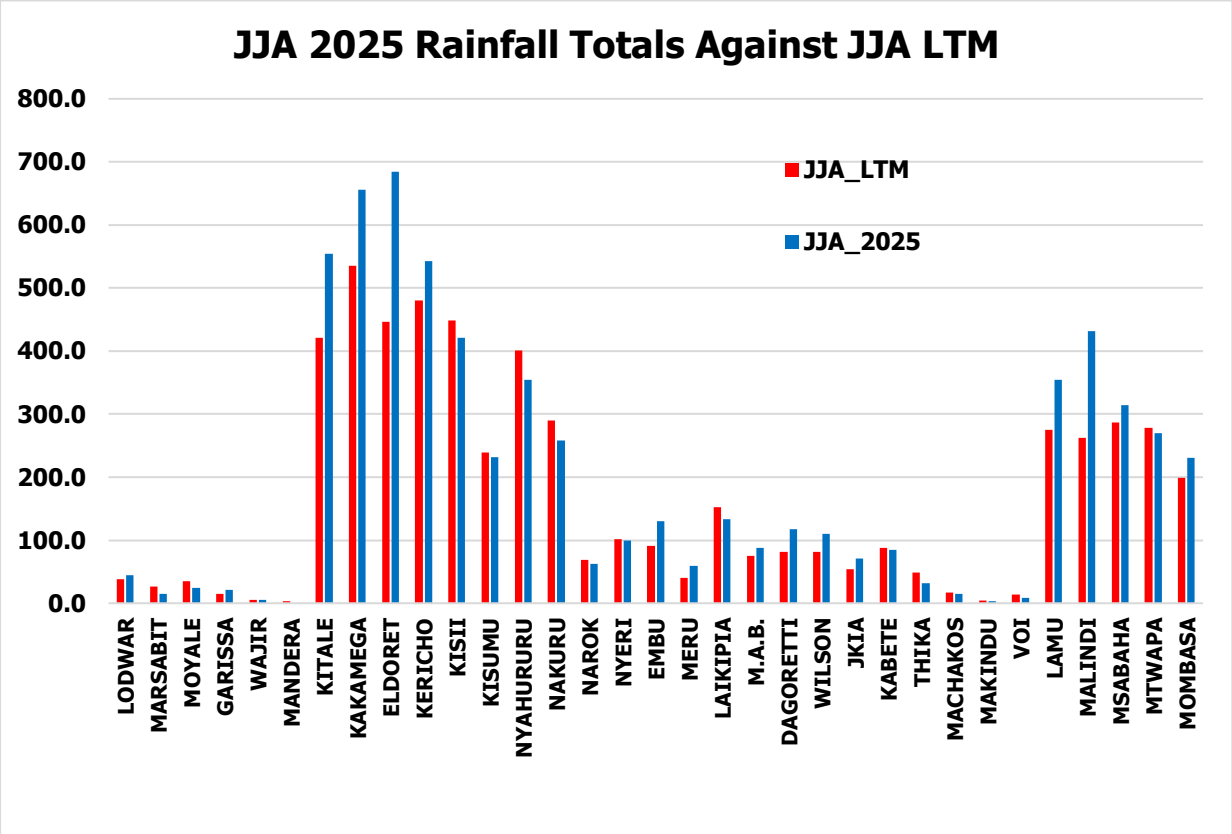


Figure 5b: JJA 2025 Rainfall Performance as a Percentage of JJA LTM

8.2.3 JUNE TO AUGUST 2025 TEMPERATURE REVIEW

The June–August (JJA) 2025 season was characterized by **warmer-than-average mean temperatures across most parts of the country**. Daytime (maximum) temperatures were generally above the seasonal average, except in Kisumu, Kericho and Kitale where near to cooler-than-average conditions were observed. Nighttime (minimum) temperatures were consistently warmer than average across the whole country, though several high-altitude areas occasionally recorded very low values below 10°C. Despite the overall warmth, **cold conditions were still experienced in the Central highlands including Nairobi and parts of the Southeastern lowlands**, especially during July and August, which coincided with the peak and gradual end of the cold season.

In June, the cold season set in over the Highlands East of the Rift Valley, Nairobi County, and parts of the Southeastern lowlands. Daytime temperatures were warmer than usual in most areas, with the exception of Eldoret and Kisumu which recorded cooler conditions, while Mtwapa was near the June LTM. Some highland stations reported maximum temperatures below 20°C, including Kangema (18.1°C), Embu (18.3°C), Meru (18.9°C), Kericho (18.9°C), and Eldoret (19.3°C). The lowest monthly maximum was 21.8°C at Nyahururu. Nighttime conditions were warmer than average countrywide, though isolated stations dropped below 10°C, including Narok (8.6°C), Eldoret (9.2°C), Laikipia Air Base (8.6–8.8°C), Kericho (8.9°C), Machakos (9.3°C), and Nyahururu, which recorded the lowest monthly minimum of 8.1°C.

July marked the peak of the cold season. Both maximum and minimum temperatures were above the July LTM in most places, except in Kisumu and Kericho where maximums were slightly cooler. Several highland stations reported maximums below 20°C, with Narok recording 16.6°C on 9 July, Kangema ranging between 17.2°C and 18.0°C on various days, Eldoret 17.6°C, Nyahururu 18.3–18.4°C, Nyeri 18.0–18.6°C, and Dagoretti 18.5°C. The lowest monthly maximum was 20.9°C at Kangema. Nighttime temperatures occasionally dropped below 10°C in high-altitude stations. For example, Kabete recorded 8.8°C, JKIA 9.1°C, Narok 8.3°C, Laikipia Air Base 8.0–8.8°C, Machakos 8.6–9.4°C, and Nyahururu remained below 10°C for much of the month, with the lowest at 9.4°C.

In August, the cold season gradually eased, though very low daytime temperatures were still observed. Several stations recorded cooler-than-average maximums, while warmer-than-average conditions were confined to Mandera, Kakamega, Thika, Makindu, Voi, Lamu, Malindi, Mtwapa, and Mombasa. Extremely cold daytime conditions were experienced on 18 August due to the Madden-Julian Oscillation (MJO) coupled with cold southerly airflows. On that day, Kangema (15.0°C), Dagoretti (15.2°C), Nyeri (15.5°C), Embu (15.8°C), Wilson (16.2°C), JKIA (16.4°C), Machakos (17.0°C), Narok (17.1°C), and Thika (17.3°C) recorded some of the lowest daytime values, with Kangema registering the lowest monthly maximum of 20.0°C.

Minimum temperatures were generally warmer than average across the country but still dropped below 10°C at several stations. These included Narok (7.1°C on 30 August), Laikipia Air Base (8.4°C on 28 August), Eldoret (8.9°C on 1 August), and Nyahururu, which remained consistently cold, recording the lowest daily minimum of 5.2°C on 30 August and a monthly average minimum of 8.3°C.

Overall, the JJA 2025 season was **warmer than average across Kenya**, with both maximum and minimum temperatures elevated relative to the long-term mean. Nonetheless,

cold spells were still experienced in high-altitude regions of Central Kenya, Nairobi, parts of the South Rift, and Southeastern lowlands, consistent with the seasonal cycle.

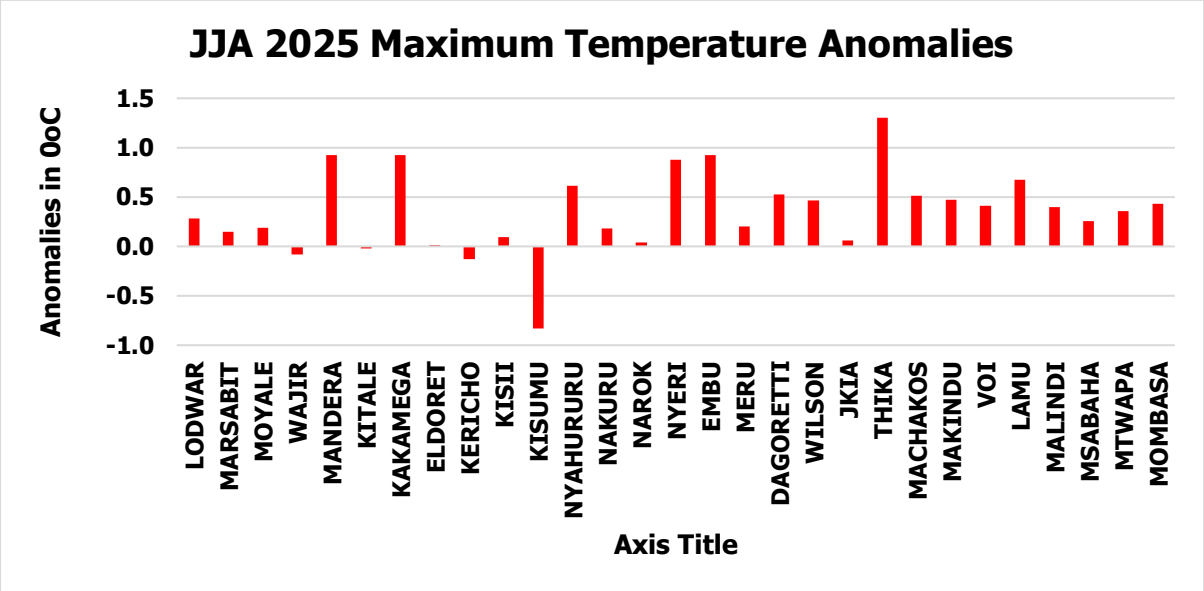


Figure 6a: JJA 2025 Maximum Temperature Anomalies

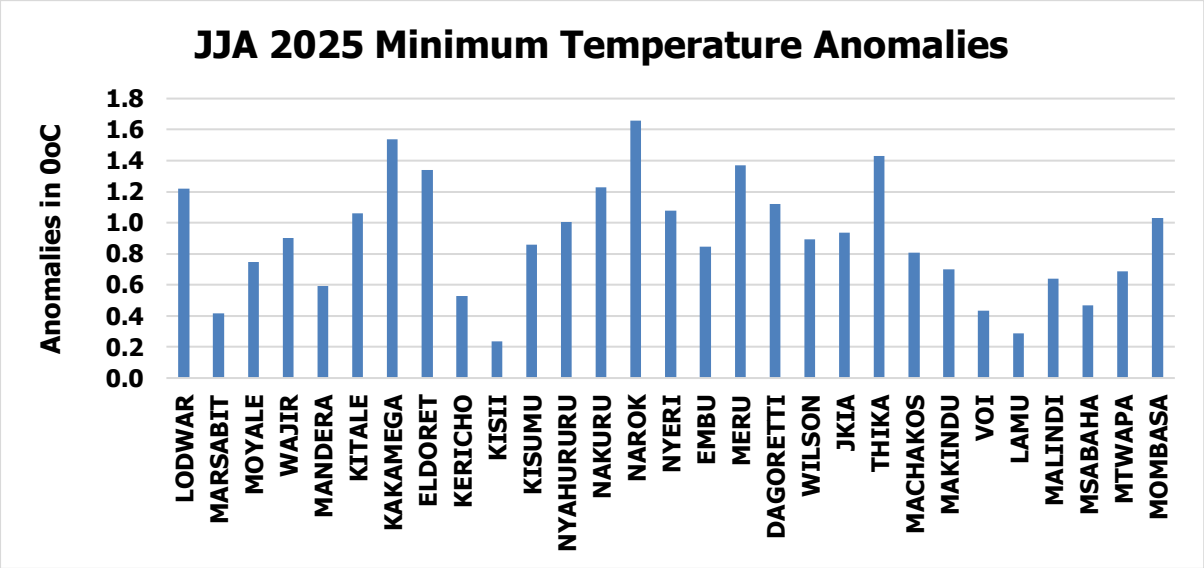


Figure 6b: JJA 2025 Minimum Temperature Anomalies

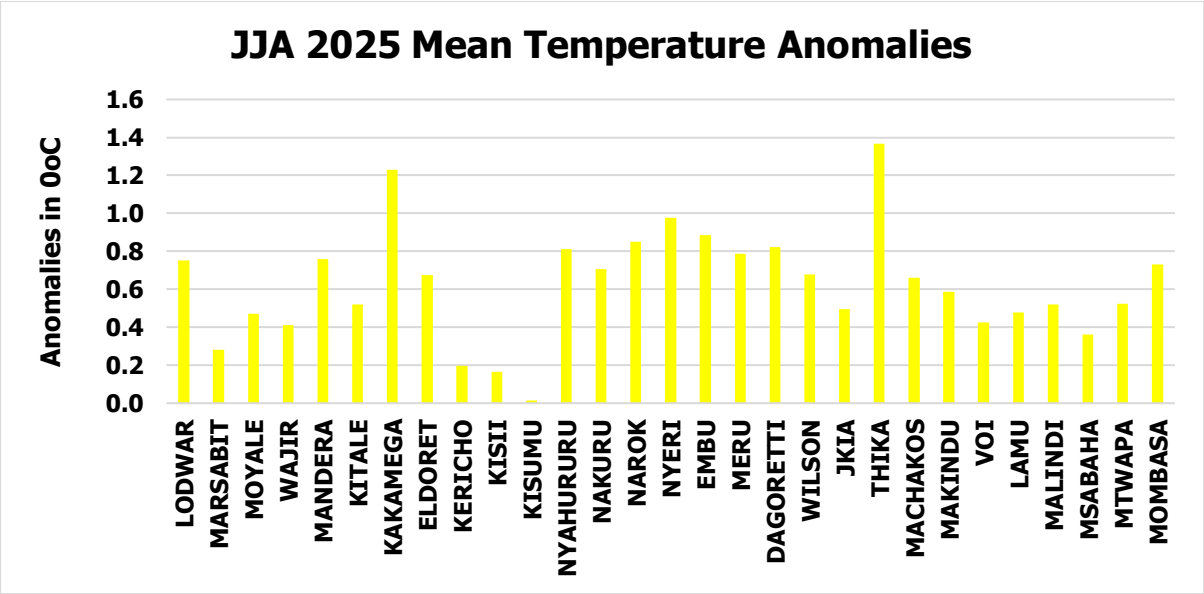


Figure 6c: JJA 2025 Mean Temperature Anomalies

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.

Charles Mugah
FOR: Ag. DIRECTOR OF METEOROLOGICAL SERVICES

Kenya Meteorological Department, Dagoretti Corner, Ngong Road │P.O. Box 30259-00100, Nairobi, Kenya
Telephone: +254 20 3867880-5, +254 724 255154
E-mail: director@meteo.go.ke │Website: https://www.meteo.go.ke