Technical Statement from the 74th Greater Horn of Africa Climate Outlook Forum (GHACOF74)

17th -18th August 2026, Kigali, Rwanda

1. The Climate Outlook Forum

The 74th Greater Horn of Africa Climate Outlook Forum (GHACOF74) was held from 17 to 18 August 2026 and organised by the IGAD Climate Prediction and Applications Centre (ICPAC) in collaboration with the National Meteorological and Hydrological Services (NMHSs) of the Greater Horn of Africa (GHA), the World Meteorological Organisation (WMO), and other international partners. The forum reviewed and documented the progress and impacts of the ongoing June to September (JJAS) 2026 season, released the consolidated objective regional climate outlook for the October-December (OND) 2026 season, examined its implications, and developed advisories and management strategies for various climate-sensitive socio-economic sectors.

The GHA region comprises Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda. Climate information users from the member states representing the key socio-economic sectors, together with representatives from the media, NGOs, humanitarian organisations, and development partners actively engaged in co-producing mitigation strategies, ensuring that the outlook and advisories are relevant, actionable, and supportive of resilience building across the region.

2. Consolidated Objective Climate Outlook for the October to December 2026 Rainfall Season

The OND season is a critical rainfall period for the equatorial Greater Horn of Africa (GHA), contributing up to 70% of the total annual rainfall in parts of Ethiopia, Kenya and Somalia. Analysis of predictions from seven Global Producing Centres (GPCs), tailored for the GHA, indicates an elevated likelihood of above-normal rainfall in OND 2026 across most parts of the region, with only isolated areas in cross-border areas of southeastern Sudan and northeastern South Sudan expected to receive depressed rainfall (Figure 1). The strongest signal for wetter-than-average conditions (probability > 90%) is forecast over southern Ethiopia, central to southern Somalia, and north-eastern Kenya.

The analysis of rainfall probabilities for the October–December 2026 season shows a high likelihood (>90%) of exceeding 400 mm in parts of central to southern Somalia, central parts of Kenya, the Lake Victoria Basin region, Burundi, western Rwanda and western Tanzania (Figure 2). Central parts of Tanzania, parts of southeastern

Ethiopia and a few regions in southern South Sudan have probabilities of up to 30% of exceeding 400 mm. Relative to historical climatology, the likelihood of receiving 400 mm is higher over most parts of the region, with the probability of up to 50% in parts of Somalia, eastern Kenya, Lake Victoria Region and western Tanzania (Figure 2b).

The predicted start dates of the October to December 2026 season based on six Global Climate Model forecasts that provide daily rainfall outputs are provided in Figure 3. Onset dates were searched within the window of 15 August to 31 December. The analysis indicates higher chances of early to normal onset dates over much of the eastern parts of the region, including Somalia, central to eastern Kenya, and most parts of Tanzania. In contrast, the western parts of the region are forecast to have delayed onset, consistent with El Niño conditions that not only reduce September rainfall but also delay the onset of the seasonal rains before its regional impact transitions from drier to wetter than usual conditions.

Comparisons of the current tropical Sea Surface Temperature (SST) pattern and the observed and predicted evolution of the Niño 3.4 index to analogous historical periods suggest that 1997 and 2023 share similarities with the May-July 2026 average tropical SST conditions and Niño 3.4 index trajectory anticipated for 2026, and in this sense may be considered as the analogue years (Figure 4). Rainfall performance during OND in 1997 and OND 2023 shows wetter-than-normal conditions in most parts of the region, consistent with the OND 2026 objective consolidated forecast. The above-normal rainfall observed in the identified analogue years over the region (both of which had El Niño active in OND) supports the likely influence of a strong El Niño and developing positive IOD in the objective forecast for OND 2026; however, the analogue-year rainfalls should not be considered replacements or alternatives to the objective forecast.

The consolidated objective temperature forecast (Figure 5) from seven Global Producing Centres (GPCs) indicates an increased likelihood of warmer-than-average surface temperatures across the GHA. Probabilities of warmer-than-average temperatures are highest over the eastern side of the GHA, with peak probabilities over eastern parts of Kenya, Ethiopia, Eritrea, as well as for Djibouti and much of Somalia. Near-normal conditions are expected over northwestern Sudan.

The outlook is relevant for seasonal timescales and for relatively large geographical areas. Local and month-to-month variations might occur as the season progresses. While wetter than usual seasonal-average conditions are most probable over much of the western GHA regions that usually receive rain in the OND season, dry spells may occur in areas with an increased likelihood of above-normal to near-normal rainfall and vice versa. ICPAC will provide regional updates on a regular basis while the National Meteorological and Hydrological Services (NMHSs) will provide detailed national and sub-national climate updates.

3. Methodology

In line with the recommendation of the World Meteorological Organisation (WMO), ICPAC has implemented an objective seasonal forecast procedure to generate climate forecasts for the Greater Horn of Africa (GHA). August 2026 initialised seasonal forecasts from seven Global Producing Centres (GPCs) were utilised and processed using three calibration techniques (canonical correlation analysis, linear regression and skill-based analysis (Kharin et al., 2017)) to develop the OND 2026 seasonal climate outlook. The final consolidated forecast is obtained by averaging the forecasts generated by the three different approaches. The seven Global Climate Models used for producing the regional consolidated forecast are CMCC, COLA-RSMAS-CCSM4, DWD, ECMWF, Météo-France, NASA-GEOSS2S, and NCEP-CFSv2.

Forecast probability distributions are established objectively to indicate the likelihood of above-normal, normal, or below-normal rainfall for each zone. Above-normal rainfall is defined as the upper third of historical OND rainfall

totals, below-normal as the lower third, and normal as the range between the upper and lower third of the rainfall totals. Climatology here refers to the historical series of weather conditions over the 30-year period (1991-2020). Forecast probability distributions for temperature are also established. The rainfall and temperature outlooks for OND 2026 for various zones within the GHA region are given in Figure 1 and Figure 5, respectively.

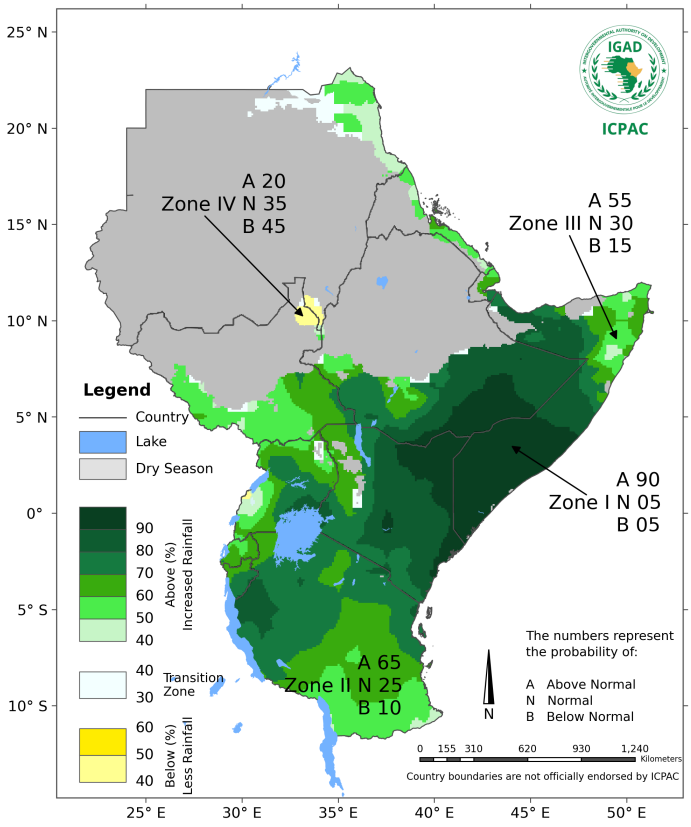
Experts reviewed observed and forecast sea surface temperature (SST) conditions across the Pacific, Indian, and Atlantic Oceans, together with other global and regional climate drivers that influence rainfall evolution during the October–December (OND) season. These factors were evaluated using a combination of dynamical and statistical forecasting models. El Niño conditions are currently established, with NOAA's Climate Prediction Centre maintaining an El Niño Advisory as of 10 August 2026. Positive SST anomalies first appeared in the far eastern Pacific in early February and subsequently expanded westward into the east-central Pacific from mid-April. Ocean warming has accelerated since then, with the latest weekly SST anomaly reaching +1.8°C in the Niño 3.4 region. The Relative Oceanic Niño Index (RONI) for May–July 2026 stands at +1.0°C, representing a substantial shift from −0.9°C during December 2025–February 2026 (DJF 2026). The WMO and major GPCs forecasts indicate that El Niño is likely to strengthen further during the remainder of 2026. There is an 81% probability of a very strong El Niño (RONI ≥ 2.0°C) during October–December 2026, while the probability that El Niño conditions will persist into the March to May 2027 season is estimated at 97%.

The Indian Ocean Dipole (IOD) is currently neutral, with forecasts suggesting a likely transition towards positive IOD conditions during the October to December season. IOD forecast skill has historically been low, and current model forecasts still indicate a wide range of possible outcomes. The interannual variability of OND rainfall in Eastern Africa is strongly linked to SST anomalies in the tropical Pacific and Indian Oceans. El Niño events (tropical Pacific) and positive IOD (Indian Ocean) are typically associated with above-normal OND rainfall over parts of the GHA. Updates on ENSO and IOD conditions will be provided regularly by the WMO and major climate centres.

The seasonal forecast was developed during the pre-COF74 climate capacity-building workshop held at ICPAC from 11th to 15th of August 2026. During this workshop, regional scientists and national forecasters from ICPAC member states assessed the progress of the ongoing JJAS 2026 season and developed regional and national-level climate outlooks for the upcoming OND season using ICPAC's High-Performance Computing (HPC) cluster.

4. Probability Forecast of Rainfall for October to December 2026

The rainfall outlook for various zones within the GHA region is given in Figure 1 below:



Zone I: In this zone (dark green), the probability for the above normal category is the highest (90%). Probabilities for the normal and below normal categories are 5% and 5%, respectively.

Zone II: In this zone (green), the above normal rainfall (wetter) category also has the highest probability. For the most widespread green shade, the probability for above normal category is 65%; the probabilities for the normal and below normal categories are 25% and 10%, respectively.

Zone III: In this zone (light green), the above normal rainfall (wetter) category has the highest probability (55%). The probabilities for the normal and below normal categories are 30% and 15%, respectively.

Zone IV: In this zone (yellow), the below normal rainfall (drier) category has the highest probability (45%). The probabilities of the near normal and above normal categories are 35% and 20%, respectively.

Figure 1. Probability forecast of rainfall for various zones within the GHA region for October to December 2026. Grey shading indicates regions where OND is climatologically a dry season.

Note: In Figure 1, the numbers (next to A, N and B) for each zone indicate the probabilities of rainfall in each of the three categories: above, near, and below-normal. For example, in Figure 1, the top number (A) indicates the probability of rainfall occurring in the above-normal category; the middle number (N) is for near-normal, and the bottom number (B) is for the below-normal category. In the case of Zone I (Figure 1), for instance, there is a 5% probability of rainfall occurring in the below-normal category, a 5% probability of rainfall occurring in the near-normal category, and a 90% probability of rainfall occurring in the above-normal category. It is emphasised that boundaries between zones should be considered as transition areas.

5. Probability of Seasonal Rainfall Exceeding 300 mm

The probability of rainfall exceeding user-relevant thresholds may be used to aid the management of risks in the food security and agriculture sectors. The probability of exceeding 400 mm of seasonal rainfall during the OND 2026 season is given in Figure 2. During the OND 2026 season, the probabilities of exceeding 400 mm are high and more than 90% in parts of central to southern Somalia, central parts of Kenya, the Lake Victoria Basin region, Burundi, western Rwanda and western Tanzania. Compared to historical times, these probabilities are higher and, in some areas, exceed 30%.

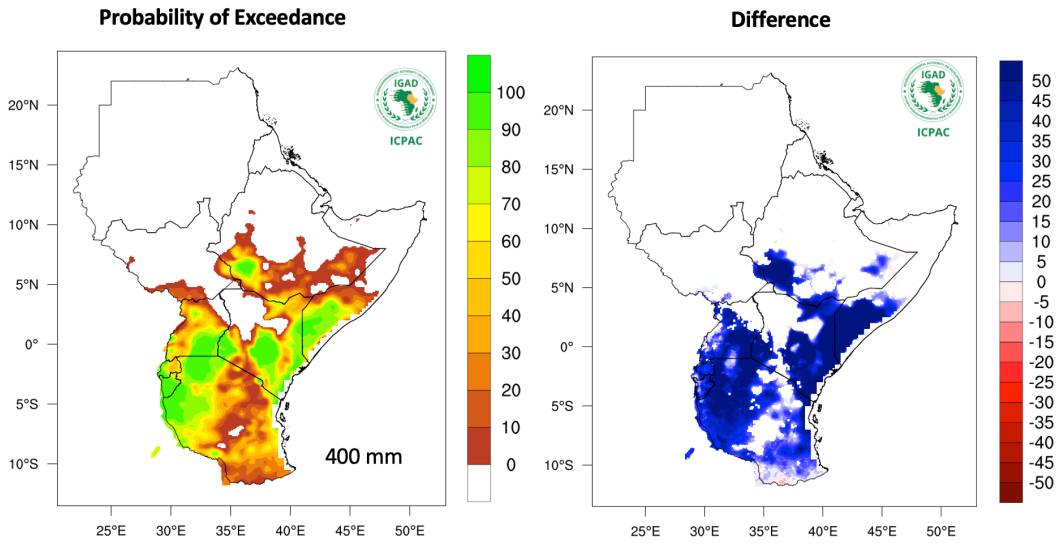


Figure 2: Probability of rainfall exceeding 400 mm during OND 2026 (left) and the difference between these probabilities and historical climatology for the same period (right).

6. Probability Forecasts of the Start of the OND 2026 Season and the Expected Average Onset Dates

The predicted most likely start dates of the October to December 2026 season, the spread in onset dates from the different ensemble members, as well as forecast probabilities for three categories of onset time (early/normal/late) are provided in Figure 3. The forecast was generated by utilising daily rainfall forecasts derived from six Global Climate Models (ECMWF, Météo-France, CMCC-Italy, DWD-Germany, ECCC-Canada, BOM-Australia) from the C3S Climate Data Store, incorporating a collective of 232 ensemble members.

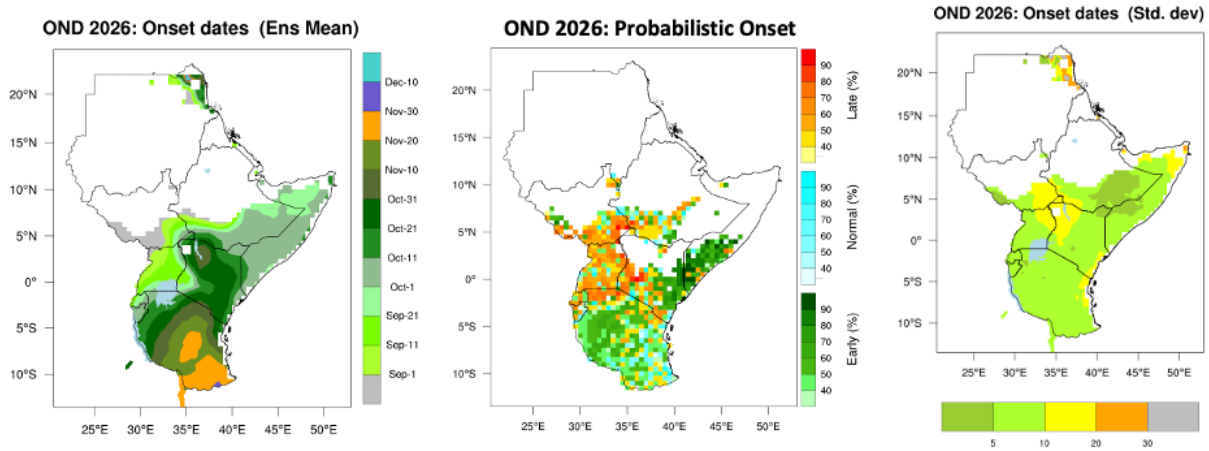


Figure 3: The map on the left indicates the most likely rainfall onset dates for the OND 2026 season from model ensemble mean values. The map in the middle indicates the forecast probabilities for three (tercile) categories of onset timing (early/normal/late). The map on the right shows the standard deviation of predicted onset dates from the different ensemble members (days) and is a measure of uncertainty in the ensemble mean values.

7. Analogue Years based on the Current Global SST Pattern and Niño 3.4 Index Evolution

The selection of analogue years based on the Niño 3.4 index is carried out by calculating the correlation and the mean difference between the combined observed and forecast evolution of Niño 3.4 in the target year and the corresponding Niño 3.4 index for the same period in previous years (Figure 4). The evolution of the Niño 3.4 index in the analogue years as well as the observed/predicted evolution in 2026 indicates that El Niño conditions are likely to further strengthen later in the year.

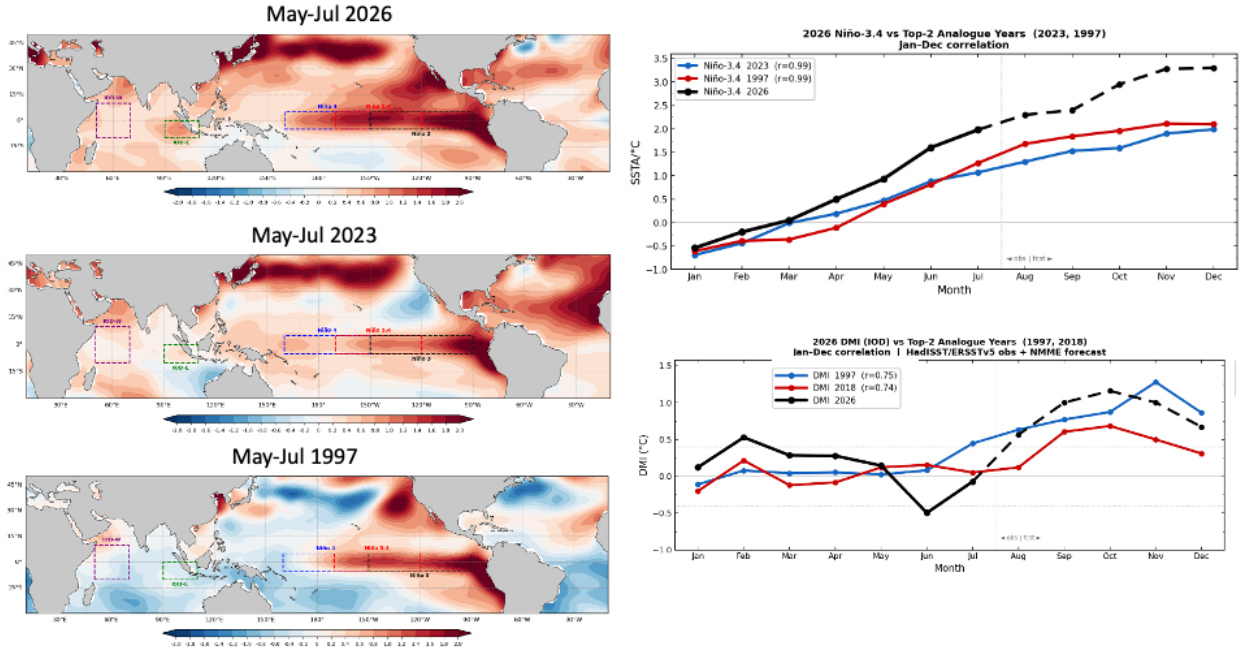
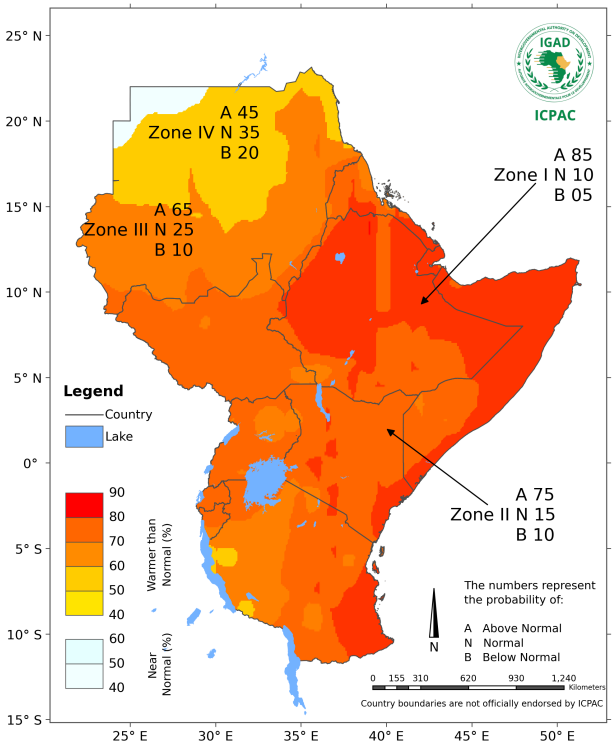


Figure 4: Left panels (top to bottom): observed sea surface temperature (SST) anomalies over the tropical oceans for May–July 2026 and for the two analogue years, May–July 2023 and May–July 1997. Right panel (top): observed and forecast evolution of the Niño 3.4 index through 2026 compared with the corresponding evolution in the analogue years 2023 and 1997. Right panel (bottom): observed and forecast evolution of the OND SST index for 2026 compared with the analogue years 1997 and 2023, based on HadISST/ERSSTv5 observations and NMME forecasts.

8. Probability Forecast of Temperature for October to December 2026

The temperature outlook for various zones within the GHA region is given in Figure 5 below.



Zone I: In this Zone (red), the above-average temperature (i.e., warmer) category is most likely at 85%. The probabilities for the near-average and below-average categories are 10% and 5%, respectively.

Zone II: In this Zone (dark orange), the above-average temperature category also has the highest probability (at 75%). The probabilities of the near-average and below-average categories are 15% and 10%, respectively.

Zone III: In this Zone (orange), the above-average temperature category also has the highest probability (at 65%). The probabilities of the near-average and below-average categories are 25% and 10%, respectively.

Zone IV: In this Zone (yellow), the above-average temperature category has the highest probability (at 45%). The probabilities of the near-average and below-average categories are 35% and 20%, respectively.

Figure 5: Probability forecast of mean surface temperatures for OND 2026 season

9. Contributions

GHACOF74 was convened with the contribution and support of the following partners and collaborating institutions:

INSTITUT GÉOGRAPHIQUE DU BURUNDI
AGENCE NATIONALE DE LA METEOROLOGIE
ETHIOPIAN METEOROLOGICAL INSTITUTE
AIAM Meteorological Service, Civil Aviation Authority
MINISTRY OF ENVIRONMENT AND FORESTRY, KENYA METEOROLOGICAL DEPARTMENT, REPUBLIC OF KENYA
Rwanda Meteorology Agency
SOUTH SUDAN METEOROLOGICAL SERVICES
SUDAN METEOROLOGICAL AUTHORITY
Ministry of Water and Environment, Uganda Meteorological Services
TMA


Rwanda Meteorology Agency
RS ISO 9001:2015 CERTIFIED
german cooperation
DEUTSCHE ZUSAMMENARBEIT
Implemented by
giz
german humanitarian assistance
MoDiaC
WISER
WFP World Food Programme
AGRA
Sustainably Growing Africa's Food Systems
Met Office
ACMAD
German Red Cross
UK International Development
Partnership | Progress | Prosperity
African Union
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THE WORLD BANK
IGAD
ICPALD
CLARE
CLIMATE ADAPTATION & RESILIENCE
UK International Development
Partnership | Progress | Prosperity
IDRC · CRDI
Canada
PASSAGE
Strengthening Pastoralist Livelihoods