

GU 2025 SEASONAL CLIMATE OUTLOOK AND ACTION PLAN FOR SOMALIA

Issued on 23rd March 2025

The Somalia Multi-Stakeholder Climate Outlook Forum

The 5th National Climate Outlook Forum (NCOF-5) for Somalia was held from 4th to 5th March 2025, organized by the line ministries in the Federal Government of Somalia (FGS) and Federal Member States (FMS), the Food and Agriculture Organization (FAO) of the United Nations-Somalia office (FAOSO), the IGAD Climate Prediction and Applications Centre (ICPAC), and the World Meteorological Organization (WMO).

The forum reviewed and documented the performance and impacts of the Deyr (October to December) 2024 season, released the consolidated objective sub-regional climate

Consolidated Objective Climate Outlook for the GU(MAM) 2025 Season

The impacts of climate change have become more apparent in GHA's cross-border regions, evident in the increased frequency and intensity of extreme weather and climate events, mainly recurring and severe droughts and floods. This national forum is, therefore, a much-needed platform that encourages exchange and interactions among pastoralists, farmers, climate information producers and users, and multi-institutional and multi-stakeholder collaboration. At the end of the workshop, the development and release of expected impacts and advisories based on the Gu 2025 seasonal outlook were the key outputs of the meeting.

The Gu season is crucial for all regions in Somalia, contributing up to 40-70% of annual rainfall in the southern and northwestern parts of the country, and 50-70% in the central and northern parts of the country. On average, the Gu season brings 200-300 mm of rainfall in the southern parts, 100-200 mm of rainfall over the central and northwestern parts, and 50-100 mm of rainfall over the northern parts of the country. The Gu 2025 rainfall outlook shows a high likelihood of drier-than-normal conditions across all states and regions of Somalia, except for isolated highland areas in the Sanaag and Bari regions in the north and coastal parts of Hobyo district in Mudug region. Several areas in Gedo, Bakool and Galgaduud regions, northwestern parts of Bay region particularly Baydhaba district, eastern parts of Hiraan region, and areas of Mudug region bordering Ethiopia particularly Galdogob district, are predicted to have more than a 50 % likelihood of experiencing drier-than-normal conditions (Figure 1).

Warmer than average temperatures are expected throughout the regions of Somalia. There is a 60 % probability of above normal temperatures over areas in the southern parts of the country particularly Lower Juba, Middle Juba and Lower Shabelle regions. Most parts of Gedo, Bay, Bakool, Hiraan, Middle Shabelle, and Galgaduud regions, and southern and coastal parts of Mudug particularly Hobyo district are expected to experience warmer than average temperature anomalies with a probability of more than 60 % (Figure 2). There is up to 70 % likelihood that most inland parts of Somaliland and Bari region in Puntland will observe above normal temperatures.

The onset of rainfall, based on the average forecast from five Global Climate Models (GCMs), is likely to be observed between 10 and 17 April 2025 in the Gedo region and its border areas with Bakool and Bay regions, Borama and southern parts of

outlook for Gu (March to May) 2025 season, discussed the implications of the outlook, and further developed advisories and management strategies for various climate-sensitive socio-economic sectors. Climate information users from the relevant socio-economic sectors, such as Agriculture and Food Security, Health, Disaster Risk Management (DRM), Water and Energy, Livestock and Rangeland, Media, NGOs, Humanitarian Organizations, and development partners, actively participated in the formulation of mitigation strategies.

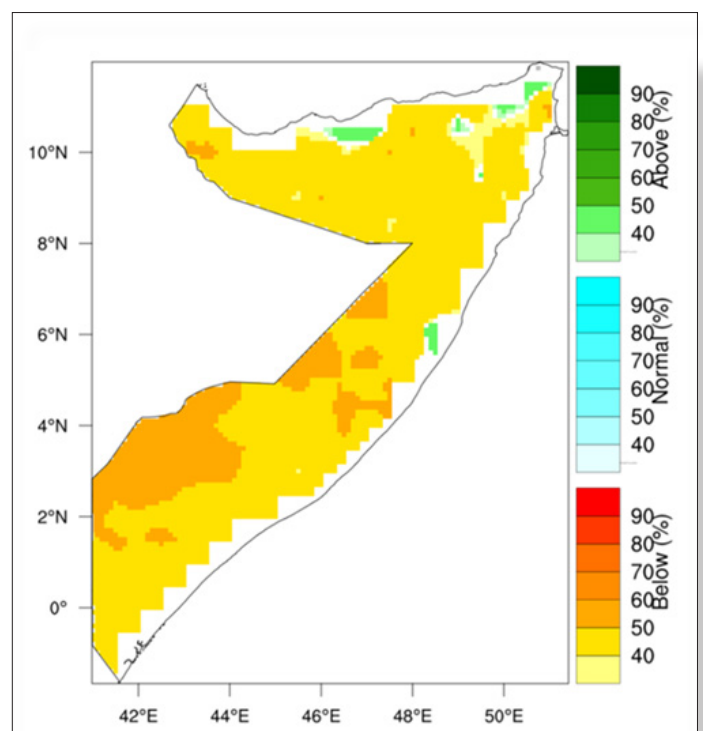


Figure 1: The Gu (March-May) 2025 season rainfall outlook over Somalia

Zaylac district in Awdal region, and southern parts of both Gebiley and Hargeisa districts in Woqooyi Galbeed.. Rainfall onset is likely to be realized a week afterwards (from 17 April) in the rest of Bay and Bakool regions, Lower Juba, Hiraan and Galgaduud regions, inland parts of Middle Juba region, Hargeisa district in Woqooyi Galbeed and Owdweyne district in Togdheer region. The other parts of Togdheer region, western parts of Sool-Sanaag particularly Caynabo and Ceel Afweyn districts, southern parts of Nugaal region, Mudug and Lower Shabelle region, and the coastal parts of Middle Juba, are likely to meet the criteria for rainfall onset by 24 to 30 April 2025. The latest rainfall onset dates are anticipated over the Bari region and eastern parts of Sool-Sanaag particularly Laasqoray and Taleex districts (Figure 3a). In terms of anomalies, early rainfall onset dates are expected in the central parts of the country particularly Hiraan and Galmudug regions and Hobyo district and coastal parts Jariiban district in Mudug region, and Borama district and southern parts of Zaylac district in Awdal region (Figure 3b).

Delayed rainfall onset is expected in southern parts of Lower Juba region particularly Badhaadhe district, northern parts of Bari region particularly Caluula district, and northern parts of Sanaag region particularly Laasqoray district. The dry period following the onset of rainfall is likely to be shorter in most areas of the Hiraan, Middle Shabelle and Galmudug regions compared to normal conditions. Conversely, the length of the dry period after the onset of rainfall is expected to be longer in most parts of the Bari region.

The time of maximum wet spells following rainfall onset is likely to occur between April 13 and April 20 over Gedo and Bakool regions and southern parts of Awdal region and Gebiley district in Woqoyi Galbeed region. Maximum wet spells are likely to be observed a week afterwards (20 – 27 April 2025) over most parts of Bay, Hiraan, Middle Shabelle, Galgaduud, Mudug, and Togdheer regions and Hargeisa district in Woqooyi Galbeed region (Figure 4a). Maximum wet spells over most parts of Puntland, Sool and Sanaag regions, and the southern coastal regions including Lower Juba, Middle Juba, Lower Shabelle and Middle Shabelle are expected to occur from April 27 to May 11, 2025. The first maximum wet spells after rainfall onset are likely to range between 1 and 4 spells in most parts of the country except over Lower Juba, Middle Juba, Lower Shabelle and parts of Bay and Bakool regions where they are likely to range between 4 and 8 spells. (Figure 4b).

Impacts of Gu 2025 Rainfall and Temperature Forecast

Negative Impacts

Given the observed evolving drought conditions of Somalia, the > 50% probability of drier than normal conditions over some parts of Gedo, Bakool and Galgaduud regions, northwestern parts of Bay region particularly Baydhaba district, eastern parts of Hiraan region, and Galdogob district in Mudug is likely to lead to significant crop failure and acute water shortages are likely. The impacted areas may experience reduced pasture conditions, putting pressure on livestock survival, increasing mortality rates, and intensifying conflicts over water and grazing resources.

The anticipated dry conditions will likely result in lower water levels in key water points, placing additional strain on communities dependent on surface water sources. This may exacerbate food insecurity, increase malnutrition rates, and heighten humanitarian needs in vulnerable communities. Areas with prolonged dry spells following rainfall onset, particularly in Bari region, are expected to face severe agropastoral impacts.

Elevated temperatures are projected to accelerate evapotranspiration, intensifying water loss from soil and vegetation, thereby worsening water shortages and drought conditions over most parts of the country. Livestock heat stress is likely to lead to increase mortality rates. Heat-related illnesses are likely to increase among vulnerable populations, particularly the elderly, young children, and individuals with pre-existing health conditions. This is particularly likely over most inland parts of Somaliland and Bari region in Puntland where there is >70% probability of above normal temperatures. Warmer conditions may also lead to increased spread of vector-borne diseases such as malaria and dengue, particularly in coastal and riverine regions.

The impacts of the Gu 2025 outlook on the different livelihoods across Somalia is summarized in the table in Appendix I

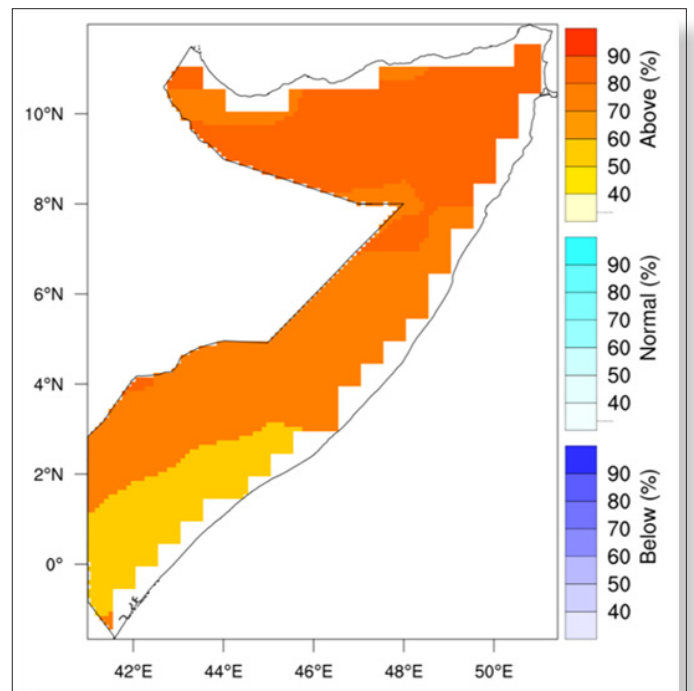


Figure 2: The Gu (March-May) 2025 season mean temperature outlook

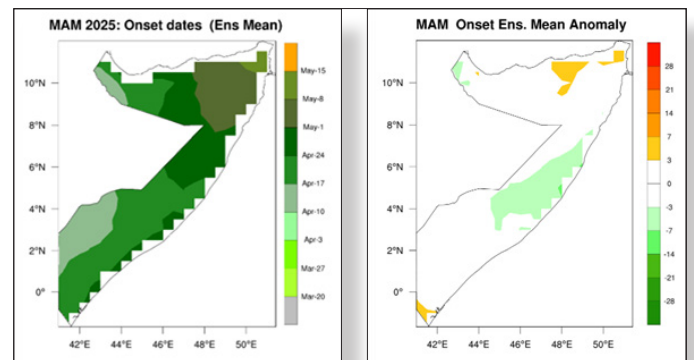


Figure 3: The Gu (March-May) 2025 season rainfall onset dates. (a) Rainfall onset dates, (b) rainfall onset dates anomalies

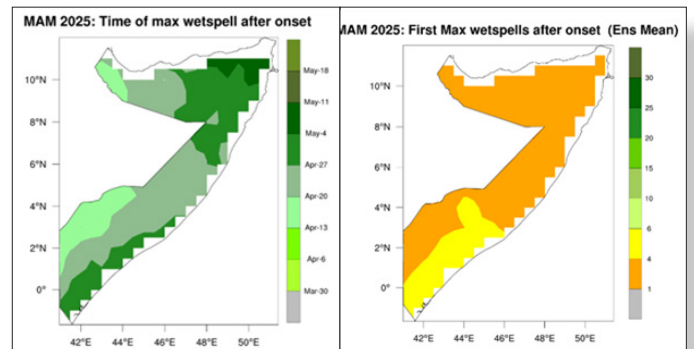


Figure 4: The Gu (March-May) 2025 season: (a) time of maximum wet spells after rainfall onset, (b) first maximum wet spells after rainfall onset

Positive Impacts

Some positive impacts are likely to be experienced as a result of localized wet conditions, early onset and shorter dry spells. Some northern highland areas in Sanaag and Bari regions and localized coastal areas in Hobyo district in Mudug region may receive normal to above-normal rainfall, providing favorable conditions for improved pasture regeneration and enhanced water availability. These areas may experience improved agricultural conditions in localized pockets. The anticipated early rainfall onset in the central parts of the country particularly Hiraan and Galmudug regions and Hobyo district

and coastal parts of Jariiban district in Mudug region, and Borama district and southern parts of Zaylac district in Awdal region may create opportunities for early planting in some agricultural zones. This is even more likely with short-cycle crops and pasture over isolated areas where shorter dry spells will be observed. This improved soil moisture retention and crop yields could enhance food production and reduce water stress for both humans and livestock in these areas.

Analogue Years

The selection of analogue years based on the Nino 3.4 index is done by calculating the correlation and mean difference between the observed and forecast evolution of Nino3.4 in the target year and the corresponding index for the same period in previous years (Figure 5). The evolution of the Nino3.4 index in the analogue years, as well as the observed/predicted evolution in 2024, indicates a transition from El Nino to La Nina conditions. Current SST patterns across tropical oceans and the evolution of the Nino3.4 index over recent and upcoming months suggest that 2016/2017 and 2020/2021 are closely related to 2024/2025 and have been identified as analogous years.

Advisories and Recommendations:

Based on sectoral discussions, the following advisories and recommendations were formulated:

- Early warning systems should be strengthened in vulnerable regions to ensure timely dissemination of climate information.
- Drought preparedness and water resource management strategies should be prioritized, particularly in the dry spell-prone regions.
- Health authorities are advised to implement preventive measures to reduce vector-borne diseases and heat-related illnesses in high-risk areas.
- Farmers are encouraged to adopt drought-tolerant crop varieties and engage in soil conservation practices to improve resilience.
- Livestock owners should explore strategic destocking measures to mitigate the risk of mass losses due to pasture degradation and water scarcity.

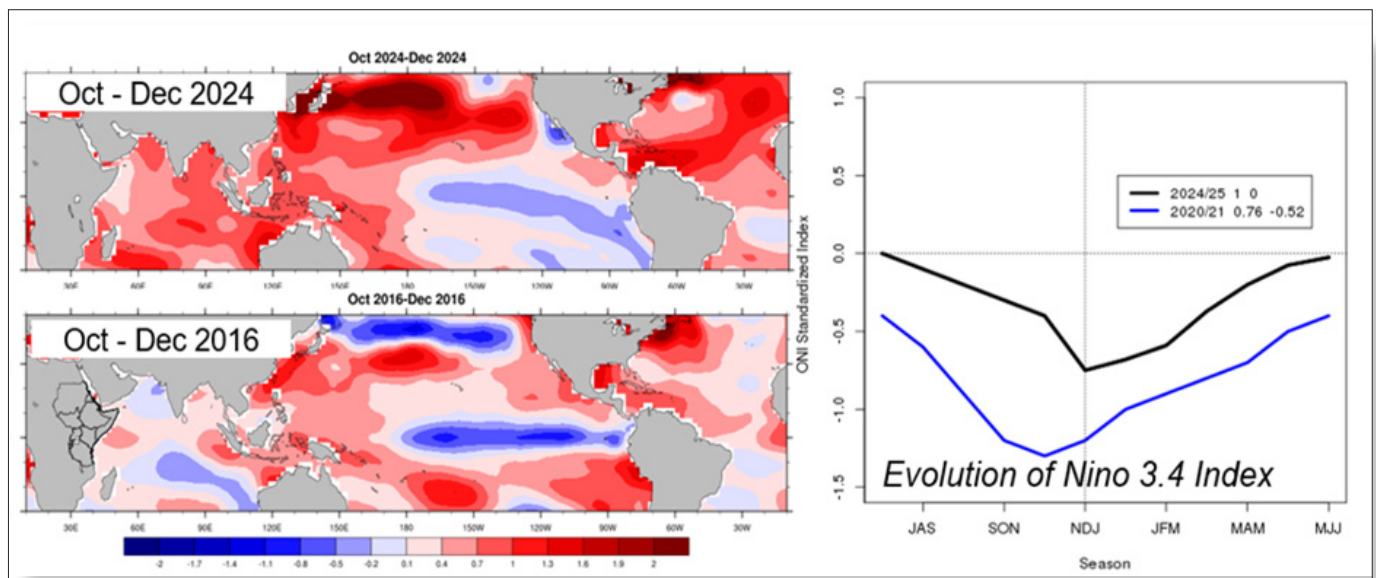


Figure 5: Spatial distribution of recent SSTs (top) together with the analogue (bottom), and the recent and forecasted anomalies of the Nino 3.4 anomalies (right) indicating ENSO neutral conditions during Gu 2025

This is a technical report of the 5th Sub-Regional Climate Outlook Forum (sub-COF) organized by the Federal Government of Somalia (Department of Meteorology in the Ministry of Environment and Climate Change) with technical and financial support from the Food and Agriculture Organization of the United Nations (FAO), the IGAD Climate Prediction and Applications Centre (ICPAC), and the World Meteorological Organization (WMO). Sectoral advisories and recommendations are based on discussions involving key ministries at the federal, regional, and state levels in Somalia: Ministry of Environment and Climate Change (MoECC), Ministry Agriculture and Irrigation (MoAI), Ministry of Livestock and Rangeland (MoLR), Somalia Civil Aviation Authority, Ministry of Health. The discussions also involved the academia, INGOs, NGOs and the media.

SWALIM is a multi-donor project managed by FAO and currently funded by The European Union, AICS, SDC, FCDO, Government of France and SIDA



Appendix: Livelihood-based Impact-Based Forecast (IBF) – Somalia, Gu 2025 Season

Region (Livelihood Zones)	Observed Impacts: Deyr 2024 & Jilaal 2025	Projected Impacts: Gu 2025 Rainfall Outlook	Brief Explanation of Key Impacts	Priority Sectoral Recommendations
Awdal, Woqooyi Galbeed (Pastoral, Agropastoral)	Moderate to severe drought in some areas, significant pasture and water scarcity, stressed livestock	Below-normal rainfall and elevated temperatures further degrading pasture, livestock conditions, crop yields	Rainfall deficits severely impact pasture regeneration, water availability, and crop productivity	Drought-resistant crops; emergency livestock feed and veterinary care; rehabilitate water sources
Sanaag (Pastoral, Frankincense, Fishing)	Moderate to severe drought in some areas except localized moderate rainfall; poor livestock condition	Normal rainfall in isolated northern highlands may moderately benefit frankincense; elsewhere severe drought impacts on livestock and fisheries	Frankincense production highly rainfall-dependent. Fishing yields affected by weakened ocean upwelling reducing fish abundance	Enhance water conservation; veterinary services; support frankincense and fisheries; strategic destocking
Togdheer, Sool (Pastoral)	Moderate drought with poor pasture conditions and water shortages; livestock weakened	Persistent below-normal rains intensifying pasture degradation, water scarcity, and livestock mortality	Rainfall shortfall critically undermines pasture regeneration and water availability	Rehabilitate water infrastructure; emergency fodder supplies; veterinary care; conflict-sensitive resource management
Bari, Nugaal (Pastoral, Frankincense, Fishing)	Moderate to severe drought conditions in some areas, minimal pasture and water availability, severe livestock stress	Continued severe drought conditions with significantly delayed rains; severe impacts on livestock survival, frankincense yields, and fisheries	Reduced rainfall negatively affects frankincense resin quality/quantity; weakened ocean upwelling lowers fish availability	Expand water supply infrastructure; veterinary outreach; conflict-sensitive resource planning; targeted humanitarian assistance
Mudug, Galgaduud (Pastoral, Agropastoral, Fishing)	Poor pasture conditions, water scarcity, livestock deterioration; poor crop productivity	Below-normal rains and delayed onset, exacerbating drought conditions, significantly impacting livestock, agriculture, and fisheries	Rainfall deficits affect pasture, crop productivity, and reduce coastal fish productivity due to weaker ocean upwelling	Promote drought-resilient agriculture; veterinary interventions; strategic destocking; humanitarian aid
Hiraan (Livestock, Sorghum, Pump Irrigation)	Significant drought, declining river levels; severe impacts on agriculture	Early rainfall onset beneficial briefly, but overall below-average rainfall impacting sorghum yields, irrigation-dependent agriculture	Inadequate rainfall negatively impacts irrigation schemes, reducing crop productivity and exacerbating food insecurity	Maintain irrigation infrastructure; drought preparedness measures; emergency food and nutrition support
Middle Shabelle (Sorghum, Gravity Irrigation, Livestock)	Moderate to severe drought conditions; limited irrigation capacity due to reduced river flow	Early rains may temporarily improve planting; overall below-average rainfall will reduce agricultural production, increase vulnerability	Insufficient rainfall will negatively affect gravity-fed irrigation, crop yields, and increase food insecurity	Improve irrigation infrastructure; drought-tolerant farming; emergency food and water interventions
Lower Shabelle (Agropastoral, Maize, Sorghum)	Moderate to severe drought; significant crop failures and water scarcity	Below-average rains and delayed rainfall onset severely affecting maize and sorghum productivity, intensifying humanitarian needs	Rainfall deficits significantly undermine crop yields and overall food security	Promote drought-resistant agriculture; emergency food aid; nutrition interventions
Bay (Agropastoral, Sorghum)	Moderate to severe drought; low productivity, acute water shortages	Projected below-average rains, delayed rainfall onset significantly impacting agriculture and food security	Rainfall deficits severely reduce sorghum yields and intensify livelihood insecurity	Drought-resistant crops; cash transfers; nutritional support; water harvesting infrastructure
Bakool (Pastoral, Low Potential Agropastoral)	Moderate to severe drought, acute pasture degradation, severe livestock losses	Severe drought, delayed rainfall onset exacerbating pasture and water scarcity, significantly threatening livestock survival	Limited rainfall severely affects pasture regeneration and water availability, increasing livestock mortality risk	Emergency livestock feed; veterinary care; alternative livelihood support; strengthen early warnings

Gedo (Pastoral, Agropastoral)	Moderate to severe drought; severe water shortages, pasture degradation, high displacement	Severe drought and delayed rains further worsening water scarcity, livestock survival, and increasing humanitarian impacts	Poor rainfall severely limits pasture and crop production, heightening vulnerability and displacement	Immediate water interventions particularly rainwater harvesting; veterinary support; humanitarian aid; conflict-sensitive planning
Middle Juba, Lower Juba (Agropastoral, Livestock)	Moderate to severe drought, acute pasture scarcity, poor livestock conditions	Continued drought conditions, below-average rainfall, delayed onset significantly impacting agriculture and livestock productivity	Rainfall shortfalls critically impact pasture regeneration and crop production, increasing food insecurity and livestock losses	Veterinary services; drought-resistant agriculture; emergency humanitarian interventions; conflict resolution support
Urban Livelihoods & IDP Settlements (All Regions)	Increased rural-to-urban migration due to severe drought conditions, leading to overcrowding and strain on urban resources, health services, and water supplies	Projected severe drought will further intensify rural-to-urban displacement, exacerbating overcrowding, increasing competition for limited resources (water, food, health), and heightening vulnerability in urban centers and IDP camps	Drought-induced displacement significantly strains urban services (water, sanitation, health) and exacerbates vulnerabilities among displaced populations	Scale-up humanitarian aid (food, water, shelter); enhance urban water and sanitation facilities; expand healthcare services; support livelihood programs at rural areas to reduce movement to the urban centres; and support for those already in urban areas and IDP camps

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