



Report from the Seventy First Greater Horn of Africa Climate Outlook Forum
(GHACOF 71) for October to December 2025 Season
25 - 26 August 2025, Nairobi, Kenya

Theme: Climate Services for Closing the Early Warning Gap Together

Executive Summary

ICPAC organizes GHACOFs 3 times a year to provide climate outlook for the 3 main rainfall seasons (MAM, JJAS, OND) in the region. The Greater Horn of Africa Climate Outlook Forum (GHACOF) serves as a key regional platform for co-producing tailored climate services for the Eastern Africa region. The 71st Greater Horn of Africa Climate Outlook Forum (GHACOF71) was held from 25th to 26th August 2025, at the Trade Mark Hotel in Nairobi, Kenya. It was organized by the IGAD Climate Prediction and Applications Centre (ICPAC) in collaboration with the National Meteorological and Hydrological Services (NMHS), the World Meteorological Organization (WMO), and other partners. The forum took place virtually and in-person and its objectives were to review and document progress and impacts of the June to August 2025 season, release the consolidated objective regional climate outlook for the October to December 2025 season, discuss the implications of the OND 2025 climate forecast, and develop advisories and management strategies for various climate-sensitive socio-economic sectors.

A week-long climate scientists' workshop, known as pre-GHACOF, took place from 18th to 22nd August at ICPAC in Nairobi, where both regional and national objective seasonal forecasts were developed, with the regional forecast serving as the main input for GHACOF71. The GHA region comprises Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda. Climate information users from the relevant sectors, (disaster risk management, agriculture and food security, livestock, water resources, health, conflict, and media), as well as NGOs, humanitarian organizations and development partners, actively participated in the formulation of the mitigation strategies. The forum reviewed the state of the global climate system, including the ENSO conditions, IOD, and SSTs over the Pacific and Indian Oceans, and considered their expected impacts on the GHA during the October to December 2025 rainfall season.

GHACOF71 was held within the framework of the IGAD regional strategy for mainstreaming climate information in vital socio-economic sectors for disaster risk reduction and sustainable development, under the theme 'Climate Services for Closing the Early Warning Gap Together'.

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1. How Regional Frameworks for Climate Services Can Reduce the Comprehensive Early Warning Gap

Dr. Philip Osano, representing the World Agroforestry Centre (ICRAF), delivered his keynote address with his presentation focused on the theme of Comprehensive Early Warning, structured around three central pillars: climate, early warning, and air pollution/environment. Drawing from his PhD research on the drylands of Kenya, Dr. Osano highlighted the Horn of Africa as a region of long-standing academic and professional interest. He noted that households across Africa, particularly in Eastern Africa, continue to experience profound impacts from climate variability and change. Pastoralist communities, once heavily reliant on traditional rangelands, are increasingly migrating towards urban areas, often fueling recurrent farmer–herder conflicts.

Dr. Osano underscored the importance of monitoring biodiversity sectors, with a particular emphasis on forests and the environment. He explained that the forest sector, though central to climate resilience, has been undermined and disproportionately affected by climate change. He advocated for the application of an existing regional framework to strengthen forest monitoring and governance. In addressing comprehensive early warning, Dr. Osano turned attention to the intersection of air pollution and environmental management. He cited recent global forest fire events in Canada, Greece, Spain, and Portugal as stark reminders of the environmental and health consequences of unchecked climate risks. He emphasized the need to connect existing biodiversity databases with biodiversity laws to strengthen policy implementation and resilience planning.

Looking ahead, Dr. Osano stressed the relevance of the Fourth Industrial Revolution in shaping the future of early warning systems. He advocated for co-production of knowledge and collaborative reporting that integrates biodiversity, air pollution, and climate early warning into a unified framework. In conclusion, he outlined four key takeaways for advancing comprehensive early warning systems in the region:

- Strengthening partnerships for effective Early Warning Systems (EWS).
- Investing in capacity building, particularly by leveraging the expertise within universities.
- Enhancing knowledge on early warning as it relates to pollution.
- Placing the environment at the centre of early warning and climate resilience efforts.

2. Looking Back: Seasonal Performance and Implications

2.1 June-August 2025 seasonal performance

Mr. Anthony Mwanti presented the seasonal performance so far for the June, July and 2 dekads of August. He pointed out that during June 2025, rainfall conditions across much of Uganda were largely within the average range, with some localized enhancements observed over the coastal regions of Kenya and Tanzania. From the second dekad of June, western Ethiopia experienced enhanced rainfall, which marked the beginning of a period of above-average precipitation extending into July.

In July, the region recorded widespread above-average rainfall during the first two dekads. However, significant intra-seasonal variability was observed, with a notable reduction in rainfall amounts during the third dekad of July. This variability was followed by a resumption of enhanced rainfall, sustained during the first two dekads of August.

In terms of rainfall frequency, July recorded more rainy days; often exceeding 14 days particularly across Ethiopia, South Sudan, and Sudan. Seasonal rainfall onset occurred earlier than usual in some areas, with northern regions, especially Ethiopia and Sudan, beginning their rainfall season between early and mid-July. Prolonged wet spells were reported in western and central Ethiopia, contributing to enhanced soil moisture conditions and supporting agricultural activities.

From a monthly perspective, rainfall performance in July was significantly enhanced compared to June, aligning closely with the forecast outlook. Temperatures during June and July were consistently warmer than average across most parts of the region.

Off-season rainfall events in equatorial East Africa were linked to an active phase of the Madden–Julian Oscillation (MJO). Both the El Niño–Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) remained in neutral phases during this period, indicating that local and intra-seasonal drivers played a stronger role in influencing rainfall variability.

2.2 Sectoral Impact Assessment

2.2.1 Disaster Risk Management Sector

Negative Impacts

The negative impacts recorded from June to August in the region include flood, fires, Epidemic, drought, Earthquake, landslides and storms. More than 6 million people were affected by both drought and flood with 1668 deaths reported. In terms of infrastructure damage, more than 10,000 houses, 7 schools, and 21 hectares of crop lands were destroyed. Other infrastructures reported to have been affected include water supply, roads, hospitals, bridges, and power lines.

Mitigation measures

- Dissemination through Bulk SMS to communities at risk.
- Physical Engagements with communities at identified hotspots.
- Letters to the National Government Administrative Officers giving relevant advisories.
- Coordination of Anticipatory Action Sub Working Groups and Emergency Preparedness and Response Working Groups.
- 86,000 affected people were evacuated with support of Red Cross societies.
- Coordination and activation of humanitarian interventions.
- Rehabilitation and construction of new dykes along riverbanks at risk of overflow.
- Provision of temporary shelter in consideration of gender to prevent gender-based violence.

Some of the good practices and key lessons learned during the implementation of these strategies include the importance of community involvement in the planning and design of DRM interventions to facilitate program ownership and promote their sustainability. Similarly, stakeholder coordination is crucial for timely resource mobilization and efficient utilization while weather forecasts with sufficient lead time are critical for effective anticipatory action.

2.2.2 Livestock and Rangelands

Positive Impacts

Early and well-distributed rainfall in Ethiopia, Somalia, Uganda, and Djibouti supported the regeneration of pasture resources, leading to improved livestock body conditions and increased productivity in meat, milk, hides, and skins. Similar favorable conditions in South Sudan and Uganda enhanced food security and household incomes through stable or improved livestock prices. In Kenya and Sudan, stable pasture, crop residues, and water availability from the good performance of the March–May (MAM) season supported sustained livestock production. In South Sudan, good rainfall also promoted fish availability and a vibrant fish market, contributing to improved nutrition.

Negative Impacts

Despite localized improvements, Djibouti, Somalia, and parts of Uganda experienced low rainfall and drought conditions that negatively affected both crops and pasture. In Djibouti, Somalia, and Kenya, livestock productivity declined, weakening rural incomes and food security. Localized flooding in some areas of Ethiopia, Somalia, South Sudan, Sudan, and Uganda caused damage to crops and livestock, disrupting early planting activities. Outbreaks of livestock diseases such as anthrax and vector-borne infections were reported in Ethiopia, Kenya, South Sudan, Sudan, and Uganda, while conflict and insecurity in Somalia, South Sudan, and Sudan continued to disrupt livestock production and market access.

In Djibouti and Somalia, women and girls were forced to travel longer distances to access essential resources such as water and pasture, heightening protection risks. Displacement and increased humanitarian needs were also reported in Somalia due to the combined effects of drought, conflict, and resource scarcity

Mitigation measures

In Sudan, the expansion of natural pasture areas reduced harmful parasites, while the establishment of early warning and multi-hazard systems enhanced preparedness. In Djibouti, early preparedness measures by government and partners, informed by seasonal forecasts, enabled timely coordination of targeted relief efforts.

2.2.3 Health Sector

Negative Impacts

The June to August season reported an increase in incidents of vector-borne and waterborne diseases and in particular cholera and malaria. In June to August the region continued to experience and increase in health related impacts, directly and indirectly linked to the observed weather conditions as summarized. Ethiopia - 735 Cases, 3 Deaths; Kenya- 426 Cases, 20 Deaths; South Sudan- 2,933Cases, 11 Deaths; Sudan - 48 768 Cases, 1094 Deaths (Jan-August); Uganda -200 Cases 5 Deaths.

2.2.4 Water Sector

Positive impacts

Across much of the region, water availability improved significantly due to elevated water levels in rivers, reservoirs, lakes, and water pans, benefiting domestic use, irrigation, and livestock in Sudan, Uganda, and Kenya's Rift Valley. Hydropower generation remained stable in Ethiopia, Sudan, and Uganda, supported by consistent inflows and reservoir storage.

In South Sudan, increased Nile River flows facilitated the navigation of larger barges, improving transport and trade, while in Somalia, higher water levels along the Juba–Shabelle rivers enhanced local water access. Groundwater recharge in Ethiopia and Sudan improved overall water security, and reduced sedimentation in Rwanda's rivers contributed to better water quality. Encouragingly, no major riverine floods were reported in Burundi, Sudan, or Tanzania during the period.

Negative Impacts

Several parts of the region experienced a decline in water levels across rivers, reservoirs, and lakes, resulting in reduced water availability in Burundi, Rwanda, Tanzania, and

Uganda. In Djibouti, Somalia, and Tanzania, groundwater recharge declined, with increased salinity reported in Djibouti due to the prolonged drought.

Hydropower production dropped in Burundi and Rwanda, while in South Sudan, poor water quality raised the cost of water treatment. In Kenya's Rift Valley, communities faced longer trekking distances and waiting times at water points as dry conditions led to siltation and breaching of water pans.

Across Burundi, Somalia, and Sudan, high temperatures accelerated evaporation, further straining available water resources. Meanwhile, riverine floods in South Sudan and Uganda, and flash floods in Ethiopia and Sudan, caused localized damage to infrastructure and disrupted access to safe water.

Mitigation measures

In Burundi, the rehabilitation of hydrological stations and pipelines, along with improved river management in Tanzania, enhanced water flow control and monitoring. Water level monitoring and better reservoir and dam management were undertaken in Burundi, Kenya, Sudan, Tanzania, and Uganda to improve resource allocation and reduce flood risks.

In Somalia and Djibouti, timely issuance of streamflow, drought, and rainfall forecasts, alongside temperature anomaly monitoring, supported early warning and planning. Groundwater monitoring, prioritization of critical water uses, and awareness campaigns promoted conservation and sustainable utilization in Tanzania, Djibouti, and Somalia.

To strengthen communication, authorities used multiple dissemination channels — including SMS alerts, radio broadcasts, community networks, bulletins, emails, social media platforms (Facebook, WhatsApp, LinkedIn), and technical meetings — ensuring timely and accessible information sharing. In South Sudan, flood warnings were translated into local languages to reach vulnerable communities.

Additionally, Rwanda and Tanzania expanded the use of water storage facilities and implemented conservation and scenario planning measures to optimize hydropower production and secure water supply.

2.2.5 Agriculture and Food security Sector

Positive Impacts

Dry conditions in Burundi, Tanzania, Uganda, and Kenya supported harvest and post-harvest activities as well as land preparation for the next cropping season. In Uganda, the first-season harvest improved food security and household incomes, while in Kenya, staple food prices slightly declined following better market supply.

In South Sudan, enhanced soil moisture improved prospects for the main-season crops, while in Sudan, access to short-term loans from financial institutions supported farmers. High cotton prices also encouraged expanded cotton cultivation in mechanized rain-fed areas, though this reduced sorghum acreage in Gadaref and Blue Nile States. In southern Somalia, residual soil moisture from the Gu rains continued to sustain crop growth in Bay, Bakool, Gedo, Hiraan, and Lower Shabelle regions.

Negative Impacts

During July 2025, several countries across the region experienced mixed agricultural outcomes, with weather extremes, pests, and economic constraints affecting crop performance and livelihoods.

In Burundi and Kenya, prolonged rains led to post-harvest losses, particularly for beans in low-lying areas such as Bomet, where waterlogging and rotting were reported. In dryland counties like Taita Taveta and Kajiado, severe moisture stress reduced projected maize and bean yields to below 50%.

In Sudan, erratic rainfall patterns, including dry spells lasting up to three weeks, and poorly distributed rains in White Nile and North Kordofan, disrupted planting and forced replanting in South Kordofan, doubling production costs. Localized flooding in Gazeira, Central Darfur, and River Nile States further damaged crops and reduced cultivated area. Agricultural operations were also constrained by conflict in Darfur and Kordofan, rising food prices, currency devaluation, and increased transportation costs for inputs and supplies.

In South Sudan, delayed rainfall onset and intermittent rains in June and July hampered agricultural activities, while in Ethiopia, particularly Amhara and Tigray, compressed planting windows for long-cycle sorghum and maize were reported. Uganda's Nakasongola and Soroti districts faced similar disruptions due to dry spells.

In Somalia, Fall Armyworm (FAW) infestations affected maize-growing areas in Bay, Lower and Middle Shabelle, and Lower Juba, while worsening drought in Awdal further strained agro-pastoral livelihoods. In both Somalia and Kenya, FAW and Striga infestations reduced crop performance. Across several drought-affected areas, women and girls were forced to walk longer distances in search of water, heightening vulnerability.

Mitigation strategies

- The JJAS 2025 NCOFs issued timely seasonal advisories (regional).
- Government and partners distributed improved seeds to smallholders, boosting national crop development (SDN, SSD, ETH).
- Effective control was applied against sorghum stubborn pest; tree locust control continues (Kassala, Red Sea, Gadaref).

- War in Sudan, asset losses, and partner dispersal limited CIS access and use (SDN).
- Staple stocks were generally adequate, with wheat and rice supplemented by duty-free imports (KEN).
- Cash transfers and food aid reached vulnerable households (DJB).

2.2.6 Conflict Sector

Positive Impacts

Communities across the cross-border clusters; Turkana, Toposa, Karamojong, and Pokot have enjoyed a period of relative peace and stability, with significant reduction in major cattle raids and conflict-related incidents. The calm has allowed people to rebuild trust and resume normal livelihoods, with most security concerns now limited to isolated cases of cattle theft.

In the Mogila Hills, shared grazing between the Turkana and Toposa communities continues peacefully, supported by adequate rainfall that has sustained pasture and water availability.

This season has also seen improved agricultural yields, particularly for groundnuts, thanks to favorable soil conditions that made harvesting easier. A notable highlight was the commemoration of 18 months of peace between the Turkana and Toposa, hosted by the Turkana community.

Negative Impacts

The Turkana Central region has endured prolonged dry spells, with no rainfall received between March and July, leaving much of the landscape dry and desolate. The lack of rain forced herders to move cattle out of the area, leaving behind only resilient species such as goats, sheep, and camels. While conditions remained largely peaceful, tension was reported around Alale in West Pokot, where Turkana herders moved to coexist with the Pokot, resulting in isolated incidents of theft but with local peace structures still functional.

In Uganda's Karamoja region including Moroto, Kotido, and areas near Mt. Elgon, rainfall was erratic and unpredictable, followed by a dry spell that reduced water and pasture availability. Water levels at Kobebe Dam, a critical shared resource between Turkana (Kenya) and Matheniko pastoralists (Moroto, Uganda), dropped drastically, nearing depletion before the July–August rains, which later came in excess and caused flooding and property damage.

Across the Dollow–Beled Hawo–Mandera cross-border belt (Somalia, Ethiopia, and Kenya), the Gu season (April–June) was below average, with rainfall poorly distributed both in space and time. While localized showers near Dolo Ado and Filtu (Ethiopia)

attracted Somali pastoralists, most of Gedo region (Somalia) and Mandera (Kenya) experienced significant rainfall deficits, leading to early water scarcity and pasture depletion ahead of the Hagaa dry season.

The resulting livestock migrations from Dollow and Beled Hawo (Somalia) into Dollo Ado (Ethiopia) and Mandera North (Kenya) have increased pressure on limited grazing areas, heightening the risk of tension and competition among Somali, Degodia, and other local clans.

Mitigation Measures

- Established peace forums.
- Government payout schemes equivalent of 50% of monthly expenses in West Pokot.
- Government & Local Peace Committees: District administrations (Dollow Somalia, Dollo Ado Ethiopia, and Mandera Kenya) are engaging in local peace dialogues to reduce pasture- and water-related clashes.
- Humanitarian Support in Somalia: FAO, WFP, and NGOs (ACF, RACIDA, Trocaire and DRC) and IGAD.

3 Opening Ceremony

The opening session was led by Dr. Richard Muita, who welcomed all the participants and set the tone for a collaborative and forward-looking forum. Representatives from both the East African Community (EAC) and the World Meteorological Organization (WMO) followed with statements underscoring the importance of strengthened regional cooperation in enhancing climate services across the Greater Horn of Africa.

Speaking on behalf of ICPAC, Dr. Abdi Fidar, Acting Director, invited H.E. Mohamed Ware, IGAD Deputy Executive Secretary, to deliver the keynote address. H.E. Ware highlighted the region's escalating climate challenges including prolonged droughts, sudden flooding events, and increasingly erratic rainfall patterns and stressed that scientific advances, strong partnerships, and political commitment must translate into tangible action. He emphasized the central role of the Regional Framework for Climate Services (RFCS) in guiding IGAD and EAC Member States to better integrate climate information into policy and decision-making. He further noted that National Meteorological and Hydrological Services (NMHSs) are key to ensuring that forecasts reach communities in formats that support preparedness, and he called for collective effort to close the persistent "early warning gap."

Delivering remarks on behalf of the Government and people of Kenya, the Cabinet Secretary for Environment, Climate Change and Forestry, Dr. Deborah M. Barasa,

welcomed participants and commended ICPAC for successfully convening 71 GHACOFs, noting the forum's vital role in advancing regional climate services. She underscored the urgency of institutionalizing GHACOFs within regional mechanisms under the Global Framework for Climate Services (GFCS). Dr. Barasa also highlighted Kenya's recent milestone; the launch of its National Framework for Climate Services (NFCS) in March 2025 and acknowledged progress by Uganda and other Member States. She reaffirmed Kenya's commitment to working with regional ministers to secure political endorsement and formally launch the RFCS during the Second Africa Climate Summit (ACS2) in Addis Ababa.

In declaring the forum officially open, she encouraged delegates to use the platform to deepen collaboration, formulate actionable recommendations, and collectively enhance the region's resilience to climate-related risks.

The opening ceremony reaffirmed the commitment of governments, regional organizations, and development partners to strengthen climate services as a foundation for resilience. The speeches set a clear agenda: to transform climate science into actionable solutions, institutionalize frameworks for climate services, and ensure that forecasts and warnings reach all communities across the region.

4 Looking ahead: State of the Climate; October to December (OND) 2025 seasonal forecast

4.1 The current state of the global Climate system

Dr. Stefan Lines and Rebecca Sawyer from the UK Met Office presented the expected 2025 OND climate drivers outlook. They began by reviewing global temperature records from 1940, highlighting that January 2025 stands out as the warmest January ever recorded. They attributed the unusually high temperature anomalies to human-driven warming. They then walked participants through the major global climate drivers expected to influence rainfall in East Africa during the OND season: ENSO, the Indian Ocean Dipole (IOD), and the Madden–Julian Oscillation (MJO).

- ENSO conditions are currently neutral, but model outlooks for the OND remains mixed
- There is a 50–60% likelihood of La Niña forming, which could strongly shape rainfall patterns across the region, although impacts will differ from one area to another.
- The IOD is in a neutral phase but negative index, with models indicating it may continue to strong negative or revert to neutral. A negative IOD could lead to drier-than-normal conditions in parts of East Africa.
- It was emphasized that it is important to closely monitor the MJO, which can shift rapidly and significantly affect rainfall, making sub-seasonal predictions essential.

4.2 October to December (OND) 2025 seasonal Outlook

Dr. Masilin presented the overview of the OND season outlook. She first explained the climatological patterns for 1991–2020 and the percentage contribution of the season to annual totals. This helped illustrate which areas rely most heavily on OND rainfall. For example, eastern Kenya and parts of Ethiopia receive nearly 60% of their annual rainfall during this season, making them highly vulnerable when OND rains fail.

Dr. Masilin then explained the statistical techniques that were used in producing the seasonal forecasts; linear regression and Canonical Correlation Analysis (CCA), explaining their purpose and application. She then presented the OND forecast based on the average output of seven models that draw on these approaches. The forecast for OND 2025 shows that;

- Depressed rainfall is expected in parts of eastern Tanzania, Kenya, and Somalia
- Wetter conditions expected over South Sudan and pockets of Rwanda
- No clear signal in some areas, where all three outcomes (below, near, and above normal) remain equally likely
- Wetter-than-usual conditions expected in September in South Sudan and western Ethiopia with drier conditions expected toward the end of the season due to La Niña and negative IOD

The 3-month SPI outlook shows expected dry conditions in eastern Kenya and southern Tanzania. The region is also expected to see delayed onset, beginning in eastern areas and progressing southward across Somalia. A prolonged dry spell is likely following onset in Kenya and Ethiopia. In terms of temperatures, warmer-than-usual conditions are expected across Somalia, Ethiopia, Kenya, Uganda, and South Sudan, while cooler anomalies may occur in parts of Tanzania.

4.3 Sector Implications for October to December (OND) 2025 seasonal forecast

4.3.1 Disaster Risk management

Impacts

Across the region, drought- and flood-related risks are expected to intensify depending on country and sub-season conditions. These include;

- Increased livestock mortality due to lack of pasture and disease outbreaks (Djibouti, Ethiopia, Kenya, Somalia, Uganda under drought conditions).
- Malnutrition among children and vulnerable groups (Djibouti, Ethiopia, Kenya, Somalia, Sudan, Uganda).

- Flood-related impacts in areas expecting wetter conditions, such as South Sudan and parts of Uganda, including displacement, infrastructure damage, and rising waterborne diseases.
- Heightened resource-based conflicts due to scarcity or population movement (Kenya, Somalia, Uganda; cross-border systems in Mandera, Pokot, and Cluster I North).
- Loss of productive labor and work time, especially in drought-affected Kenyan ASALs.

Mitigation measures

- Timely dissemination of early warning information across all countries.
- Prepositioning of humanitarian assistance, including food, medical supplies, and non-food items (Djibouti, Somalia, Uganda, South Sudan).
- Community awareness and sensitization on disaster preparedness and response (Ethiopia, Kenya, Somalia, Uganda).
- Cross-border collaboration to manage drought-related movement and conflict (Somalia, Kenya, Ethiopia).
- Preparedness for flood-prone areas, including drainage clearing and localized advisories (South Sudan, Uganda).

4.3.2 Agriculture & Food Security

Impacts

- Reduced crop yields, crop moisture stress, and potential crop failure in drought-affected areas (Djibouti, Ethiopia SE/S, Kenya, Somalia central/east, Tanzania, Rwanda east).
- Higher food prices due to reduced production and supply (Djibouti, Kenya).
- Improved crop performance in areas with wetter conditions (South Sudan bimodal regions).
- Higher post-harvest losses and aflatoxin risk in wetter zones (South Sudan, Rwanda).
- Rising food insecurity in drought-affected regions of Ethiopia, Kenya, Somalia, Sudan, and Uganda.

Mitigation measures

- Promote drought-tolerant and early-maturing crop varieties (Djibouti, Ethiopia, Kenya, Somalia, Tanzania, Rwanda, Uganda).

- Strengthen water harvesting and small-scale irrigation across the region.
- Encourage crop diversification, mulching, conservation agriculture, and integrated pest management (Ethiopia, Kenya, Tanzania, Rwanda).
- Support vulnerable households with food assistance or cash transfers (Djibouti, Kenya, Somalia).
- Enhance post-harvest handling practices, including drying and storage facilities (Kenya, Rwanda, South Sudan).
- Promote value addition and food storage to strengthen household resilience (Kenya, Uganda).

4.3.3 Water & Energy

Impacts

- Reduced river inflows and surface water shortages, particularly following drought or JJA dry conditions (Djibouti, Somalia Juba basin, Ethiopia's Tekeze/Abay/Omo-Gibe, Burundi, Tanzania, Rwanda).
- Salinization of groundwater sources due to over-reliance on boreholes (Djibouti).
- Sufficient water availability and stable hydropower in some basins (South Sudan White Nile, Uganda lake-fed hydropower, Sudan hydropower from upstream inflows, Ethiopia Wabi-Shebelle & Genale-Dawa).
- Flood risk from high inflows in some regions (Kenya localized, South Sudan downstream zones, Uganda north/southwest).

Mitigation Measures

- Promote water conservation and management practices across all countries.
- Continuously monitor water and river levels, especially in flood-prone or hydropower-dependent regions (Ethiopia, Kenya, South Sudan, Uganda, Sudan, Somalia).
- Strengthen conjunctive use of groundwater and surface water (Djibouti, Tanzania).
- Maintain and rehabilitate water-harvesting infrastructure (Djibouti, Burundi, Kenya, Ethiopia).
- Optimize hydropower production based on available flows (Kenya, Rwanda, Uganda, Sudan).
- Implement water governance measures, including water-use regulations (Somalia).

4.3.4 Livestock Sector

Impacts

- Severe water and pasture scarcity, worsening livestock body condition and increasing mortality risk in drought-affected zones (Djibouti, Ethiopia SE/S, Kenya ASALs, Somalia S/C, Uganda dry belts).
- Improved pasture and livestock condition in wetter-than-normal areas such as NE Somalia, South Sudan SE, and parts of Uganda (SW/NE).
- Spread of livestock diseases, including anthrax, transboundary diseases, and vector-borne risks (Kenya, Ethiopia, Somalia, South Sudan).
- Reduced livestock prices and incomes, especially in drought-affected pastoral areas (Djibouti, Somalia).
- Increased mobility and risk of conflict over grazing areas (Djibouti, Somalia, Kenya cross-border systems).

Mitigation Measures

- Strengthen disease surveillance, mobile veterinary services, and vaccination campaigns across the region.
- Conserve crop residues, provide supplementary feed, and manage reserve grazing areas (Djibouti, Ethiopia, Kenya, Somalia, Uganda).
- Promote voluntary destocking and livestock insurance schemes (Djibouti, Somalia, Kenya).
- Rehabilitate water points and expand livestock watering interventions (Ethiopia, Uganda, Somalia).
- Provide timely climate advisories on heat stress, pasture conditions, and market trends (Kenya, Djibouti, Ethiopia, Somalia, South Sudan).

4.3.5 Health

Impacts

- Increased heat-related health risks including dehydration, cardiac complications, heat stress among outdoor workers, and pregnancy risks (Djibouti, Ethiopia, Sudan).
- Rise in vector-borne diseases, including malaria, kala-azar, RVF, and other mosquito-borne infections (Kenya, Ethiopia, South Sudan, Somalia, Uganda).

- Higher incidence of waterborne diseases, especially cholera, AWD, and diarrheal diseases (South Sudan, Uganda, Rwanda).
- Increased malnutrition linked to drought and food insecurity (Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Uganda, Sudan).
- Higher respiratory infections and eye problems due to dust and heat (Kenya, Sudan).
- Mental health stressors due to livelihood pressure.

Mitigation Measures

- Strengthen health surveillance, particularly for heat stress, vector-borne, and waterborne diseases across all countries.
- Establish cooling shelters and provide ORS kits in heat-prone areas (Djibouti, Sudan, Ethiopia).
- Scale up vaccination campaigns, including cholera and other outbreak-prone diseases (South Sudan, Uganda, Rwanda).
- Distribute PPE to children in dusty, degraded areas (Kenya).
- Enhance public awareness and early diagnosis campaigns (Somalia, Kenya, Uganda, Rwanda).
- Deploy mobile mental-health and trauma-care teams in vulnerable regions

4.3.6 Conflict Sector

Impacts

- Increased conflict risk due to competition over water, grazing areas, and migration routes in drought-affected zones (Kenya–Ethiopia–Somalia Mendera System; Kenya–Uganda Pokot system; Cluster I North regions; Somalia central/eastern; Uganda drought belts).
- Conflict triggered by displacement during floods (South Sudan, Uganda).
- Cross-border tensions fueled by livestock mobility and resource scarcity (Djibouti, Ethiopia, Somalia, Kenya, Uganda).

Mitigation Measures

- Revitalize and support peace committees across all hotspot corridors (Mendera, Pokot, Turkana–Toposa, Somalia–Ethiopia borderlands).
- Strengthen CEWERU and CEWARN engagement, prioritizing high-risk clusters.
- Promote cross-border dialogue between pastoralist communities.

- Implement conflict-sensitive humanitarian and DRR interventions to avoid fueling tensions.
- Expand community-based early warning and response mechanisms in high-risk areas.

5 Partnerships/ Projects / Initiatives for Resilience Building

This session focused on innovative partnerships and technological initiatives addressing climate resilience challenges across the Greater Horn of Africa. The session demonstrated a clear evolution from traditional climate services toward integrated, technology-enabled platforms that bridge the gap between global climate data and community-level action.

5.1 S2S-AccelNet: International Network of Networks

Prof. Sankar Arumugam from NC State University led this session, presenting key advancements in Sub-seasonal to Seasonal (S2S) forecast applications. He highlighted the establishment of an international network dedicated to improving S2S forecasting, along with four major research gaps that require attention such as difficulties in translating forecasts for end users, the limited number of real-time demonstration projects, weak policy uptake due to structural barriers, and the lack of strong interdisciplinary collaboration.

He also described ongoing efforts to develop an open-source platform that will host data, models, and forecasts, as well as plans for a technical workshop focused on S2S forecasting and water management. He further outlined several important deliverables now underway, including the development of curated open-source datasets and models, organizing an AGU-sponsored Chapman Conference, the provision of real-time sector-specific forecasts through a dedicated project hub, and the creation of educational and capacity-building materials to support wider use of S2S forecasting tools.

5.2 Air Pollution and Early Warning for Environment Framework

The session was delivered by Danube Kirt Ngongang Wandji, Technical Air Quality Expert, who outlined a robust framework demonstrating how scientific research can be translated into societal benefits through targeted capacity building. He emphasized eight key enablers necessary for this process, including strong scientific foundations and trusted partnerships. A major gap was highlighted—the current Regional Framework for Climate Services (RFCS) does not include air quality, despite its growing importance for public health and climate resilience.

He therefore strongly advocated for air quality to be incorporated as the fifth thematic pillar within the RFCS. He also presented several recommendations to strengthen air quality management in the region. These included deploying integrated air quality sensor

networks within National Meteorological Services, enhancing technical capacity for air quality forecasting and modelling, and linking Air Quality Index advisories with existing climate early warning systems. He further encouraged countries to mainstream air quality considerations into their National Adaptation Plans to ensure a more holistic approach to climate and environmental risk management.

5.3 CRAF'D E4DRR: Hazard Modelling and Impact Estimation

This session was presented by Dr. Nishadh Kalladath from ICPAC. He highlighted several key technological advancements supporting climate and disaster risk management in the region. He showcased the development of event-based climate storylines, which help translate scientific information into actionable narratives for disaster preparedness. He also demonstrated recent upgrades to the East Africa Hazard Watch Portal, which now integrates impact-based forecasting capabilities. Another major innovation was the improved processing of the Ensemble Prediction System, which can now handle 30 ensemble members with an impressive turnaround time of just 5–10 minutes, supported by new data-streaming and computational methods. Dr. Nishadh further emphasized ongoing capacity-building efforts at ICPAC, particularly around the operationalization of Impact-Based Forecasting, the development of objective drought and flood severity thresholds, and practical applications of these tools in anticipatory action and sector-specific planning.

5.4 EarlyWarning4IGAD: Impact-Based Early Warning

The session, jointly delivered by Maria Dewi (UNU) and Vincent Okoth (ICPAC), introduced an innovative conceptual framework that connects risk assessment, early warning, and early action in a more integrated and actionable way. The framework places particular emphasis on the needs of vulnerable groups, including women, girls, and displaced populations living in camps, ensuring that risk communication and response planning are sensitive to their unique vulnerabilities. It focuses on two major impact areas for the region: drought impacts on subsistence agriculture and the health and livelihood risks associated with flooding.

The presenters also outlined the methodology underpinning the framework, which combines conceptual risk modelling with real-world operational workflows. This approach is being applied through the East Africa Drought and Flood Watches, enabling warnings to be more precisely tailored to the needs and exposure profiles of specific vulnerable populations.

5.5 HUSIKA: Multi-Channel Early Warning Platform

The session presented by Edwin and Wilberforce, explored how the system is addressing persistent communication challenges in early warning dissemination. They began by outlining the key barriers faced across the region, including vast and hard-to-reach

geographic areas, cultural and linguistic diversity, fragmented operations among institutions, and limited feedback channels that hinder understanding of whether warnings lead to meaningful action. To overcome these challenges, the presenters introduced HUSIKA's cloud-based, multi-channel architecture, designed to deliver warnings through a range of platforms including mobile/SMS, web interfaces, and integrated analytics while enabling collaboration across multiple stakeholders. The platform currently supports multiple languages, enables two-way communication with communities, and complies with the Common Alerting Protocol (CAP). HUSIKA has already been piloted in Turkana County, West Pokot, Karamoja, and select cross-border communities, demonstrating its potential for wider regional adoption.

Looking ahead, the team shared several upcoming enhancements including integration of AI-driven, agentic capabilities to improve message delivery and personalization; addition of USSD functionality to reach users with basic feature phones; and strengthened analytics to provide real-time insights into warning dissemination and user response

5.6 Enhancing Climate Change Resilience in East Africa (ECCREA)

Mr. Livingstone Byandaga presented the Enhancing Climate Change Resilience in East Africa (ECCREA) project, implemented under WISER Africa. He noted that the project aims to strengthen community resilience to climate variability, including extreme weather, seasonal changes, and long-term climate impacts. The project focuses on improving the accessibility and use of co-produced Weather and Climate Information Services (WCIS) and Impact-Based Early Warning Systems (IBEWS), specifically tailored for the bean value chain.

Implemented through a partnership between WISER and the UK Met Office, ECCREA supports climate-smart decision-making within established bean corridors across four East African countries. The project builds the capacity of farmers, traders, and service providers by delivering actionable climate information through Bean Production Hubs to improve crop management and reduce climate-related risks.

Key targets include:

- 400,000 direct beneficiaries, primarily bean farmers and value chain actors, with at least 50% women and youth.
- 3 million indirect beneficiaries through the broader networks of PABRA by 2025.

Overall, the project showcases how co-produced climate services can enhance food security and economic resilience. Strong collaboration among the Met Office, WISER, and local stakeholders remains essential for sustaining progress and achieving the project's long-term goals.

5.7 WISER Pan-African Seasonal Strengthening for East Africa (PASS-EA)

Dr. Stefan Lines introduced the WISER Pan-African Seasonal Strengthening for East Africa (PASS-EA) project, which applies a structured capacity cascade approach to enhance climate services across the region. The approach operates through three interconnected levels; Regional Climate Centres, National Meteorological and Hydrological Services, and local users ensuring that improvements in forecasting flow effectively from continental expertise down to community application. He explained how PASS-EA aims to turn existing challenges into enabling conditions across four core areas: strengthening technical capacity, improving forecast accuracy, enhancing dissemination, and expanding access to forecast information for diverse user groups.

Dr. Lines also outlined the project's broad partnership ecosystem, supported by a global consortium of more than ten organizations and benefiting over fifty institutions across East Africa. Running from 2025 to 2028, PASS-EA is funded through UK International Development under the WISER programme, with technical leadership from the UK Met Office, underscoring the strong international commitment to advancing climate resilience in the region.

6 Release of the Seasonal Forecast and Statement

The statement for the October to December 2025 outlook was read by the Acting Director of the Kenya Meteorological Department. In his remarks, he highlighted the importance of acting early given the expected below average rainfall over most parts of the country. He encouraged close collaboration amongst stakeholders to ensure that efforts and resources are leveraged for effective anticipatory actions. He then officially closed the workshop. The press release with forecast information is found in annex 1.

Annex 1: Press Release

Nairobi, Kenya, 26 August 2025: The IGAD Climate Prediction and Applications Centre (ICPAC), in collaboration with the National Meteorological and Hydrological Services (NMHSs), WMO, and development partners, has officially released the seasonal climate outlook for October to December (OND) 2025 during the 71st Greater Horn of Africa Climate Outlook Forum (GHACOF 71). The forum brought together experts and decision-makers to assess the impact of the June to September season and to present the consolidated regional outlook for the upcoming OND 2025 rainfall season.

OND is an important rainfall season for the equatorial Greater Horn of Africa, contributing up to 70% of the annual total in parts of Kenya and Somalia. The forecast points to a higher likelihood of below-normal rainfall across most parts of the region except parts of south-eastern South Sudan, north-eastern and south-western parts of Uganda, where wetter than usual conditions are forecasted.

Key highlights of the OND 2025 Outlook

Rainfall Forecast

- Below-normal rainfall is expected over most parts of the Greater Horn of Africa, with the strongest signal over eastern parts of the region, including southern Ethiopia, much of Somalia, eastern Kenya, and parts of central and southern Tanzania.
- On the other hand, above-normal rainfall is expected in western parts of the region, particularly in south-eastern South Sudan, north-eastern and south-western Uganda, northern Somalia, and parts of northern Rwanda.
- There is a high likelihood (>70%) of exceeding 300 mm of rainfall in parts of western Kenya, southern Uganda, much of Rwanda and Burundi, and north-western Tanzania.
- Regions such as south-western Ethiopia, northwestern Kenya, central to northern Uganda, most of Rwanda, and western Burundi present equal chances for rainfall.
- A delayed onset is predicted over the eastern parts of the region, particularly in southern Somalia, eastern/central Kenya, and parts of southern and eastern Tanzania.
- In contrast, early to normal onset is expected over much of the western parts of the region, including south-western Ethiopia, much of southern South Sudan, Uganda, western Kenya, much of Burundi, Rwanda, and western as well as central Tanzania.

Temperature Outlook

- Generally, the forecast indicates an increased likelihood of warmer-than-average surface temperatures across the GHA, with the highest likelihood over the eastern part of the region.
- Average to cooler-than-average conditions are expected over cross-border areas of Uganda, South Sudan, Ethiopia, and Kenya, as well as north-western Sudan.

H.E. Mr. Mohamed Ware, Deputy Executive Secretary of IGAD, emphasised the need for collaboration, stating, *“The Greater Horn of Africa is at the frontline of the climate crisis. Climate information must reach the last mile, and only through collaboration and early action can we turn forecasts into meaningful messages that drive timely action.”*

Dr. Deborah M. Barasa, Cabinet Secretary, Ministry of Environment, Climate Change and Forestry, Kenya, noted, *“Bridging the early warning gap requires shared knowledge, timely information, and a united regional approach. Kenya remains committed to supporting regional frameworks that strengthen climate resilience across our communities.”*

Mr. Edward Muriuki, Acting Director, Kenya Meteorological Department (KMD) stated, *“Early warning systems save lives only when they reach everyone, including the most vulnerable. At KMD, we remain committed to providing accurate and timely climate services that support communities to plan, adapt, and build resilience.”*

-End-

[Access the GHACOF 71 Technical Statement](#)

Note to Editors:

GHACOF 71 was convened as a hybrid event on the 25th and 26th of August 2025. ICPAC will issue regular regional updates at www.icpac.net, while NMHSs will provide detailed national and sub-national forecasts and advisories to guide planning, preparedness, and response.

The Forum was attended by representatives from the 11 Member States of the Greater Horn of Africa region (Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda), alongside representatives from key sectors (agriculture and food security, livestock, water resources, health, disaster risk management, conflict and media), NGOs, humanitarian agencies, media, and development partners.

Annex 2: Certificate Issuance Ceremony

Dr. Titike Bahaga presided over the issuance of certificates of completion to representatives from the National Meteorological and Hydrological Services (NMHS) of all ICPAC member states. The certificates were awarded recognizing each participant's successful completion of a rigorous and comprehensive training program which included:

- Three PRE-COF Capacity Building Workshops on Seasonal Forecasting held in 2025.
- The Foundational Climate Prediction Training Workshop held from 25 November to 6 December 2024 at ICPAC in Nairobi, Kenya.

The training aimed to enhance regional expertise in seasonal forecasting, a critical skill for building climate resilience.

The following forecasters were recognized and presented with their certificates.

- Houssein Darar Dirieh - Djibouti
- Donatien Ngendakumana - Burundi
- Aidarus Sheikh Osman - Somalia
- Mathias Robert Arinaitwe - Uganda
- Ramadhani Omary - Tanzania
- Asaminew Teshome - Ethiopia
- Samuel Thon - South Sudan
- Fathi Ali Mohamed - Sudan
- Floribert Vuguziga - Rwanda
- Jacqueline Uwimbabazi - Rwanda
- Caroline Luvanowa Amukono - Kenya
- Aman Saleh Hasseno – Eritrea