



# SEPTEMBER TO NOVEMBER CLIMATE ADVISORY FOR PASTORAL COMMUNITIES OF ETHIOPIA

SEPTEMBER 2025





# ACRONYMS

BoM	Bureau of Meteorology
EIAR	Ethiopian Institute of Agricultural Research
ENSO	El Niño Southern Oscillation
HSI	Heat Stress Index
IOD	Indian Ocean Dipole
GCM	Global Climate Models
ITCZ	Intertropical Convergence Zone
IRI	International Research Institute
JAS	July, August, September
MJO	Madden–Julian Oscillation
MME	Multi–Model Ensemble
NOAA	National Oceanic and Atmospheric Administration
SON	September, October, and November
THI	Temperature–Humidity Index
PCA	Pastoral Climate Advisory
PCoPs	Pastoral Community of Practice
WRSI	Water Requirement Satisfaction Index
WMO	World Meteorological Organization



# Acknowledgment

---

This pastoral climate advisory was produced by the leadership of the team of researchers from the Climate and Computational Science Research Directorate(C&CSR) of the Ethiopian Institute of Agricultural Research (EIAR), in close collaboration with the Yabello Pastoral and Dryland Agriculture Research Centre, the Alliance of Bioversity International and CIAT and Addis Ababa University.

Cover photo: Liyuneh Gebre (Alliance Bioversity & CIAT), taken at Miyo Borana

## Authors

Olika Dessalegn [1]  
Liyuneh Gebre [2]  
Abu Tolcha[1]  
Almaz Negussie [1]  
Chala Edao [1]  
Melese Tadesse [1]  
Shibru Gelana [1]  
Girma Mamo (PhD.) [1]  
Minilik Tsega [1]  
Jaldesa Doyo [3]  
Asfwu Ejo[3]  
Numery Abdulhamid [2]  
Lidya Tesfaye [2]  
Sintayehu Workneh (PhD.) [2]  
Sintayehu Alemayehu (PhD.) [2]

## DISCLAIMER

---

The SON seasonal pastoral advisory is developed with field experiment data, GCM outputs and reanalysis data from satellites. With the possibilities of the uncertainty in GCM and satellite outputs, a cascaded effect during the data assimilation is highly probable. In such cases, EIAR will not guarantee the seasonal pastoral outlook accuracy and neither accept any liability for any loss or damage resulting from its use. We also strongly advice users to reinforce their decisions with the intra-season updates from Ethiopian Meteorological Institute.

---

[1] Ethiopian Institute of Agricultural Research

[2] Alliance Bioversity and CIAT

[3] Oromia Agricultural Research Institute



# Preamble

The September to November (SON) rainfall is a crucial for pastoral communities in south and southeastern Ethiopia. The season is locally known as 'Hagayya' in the Borana zone and 'Deyr' in the Somali region. In Afar region, a small rainfall primarily occurs in October and November which is locally known as 'Dada'e' season. The seasonal rainfall patterns in these pastoral regions are highly variable and can unexpectedly change based on the shifts in global, regional and local rainfall driving factors. Among the global rainfall drivers, El Niño-Southern Oscillation (ENSO), Indian Ocean Dipole (IOD) and Madden-Julian Oscillation (MJO) are used for generating this crucial bulletin. In line with this, the recent ENSO evolution report indicated that currently ENSO is at neutral phase and predicted to linger on neutral condition during the upcoming season.

Likewise, currently, the IOD is neutral and predicted to shift towards a negative phase between September and November. The MJO is currently away from the phases that positively affect the East African rainfall until mid-October. Based on these, the late onset and drier than normal rainfall condition is predicted in Somali region and Borena zone. Therefore, this climate outlook, along with the waterpoint and rangeland advisories, can help pastoral and agro-pastoral communities in the south and southeastern lowlands of Ethiopia to alert key stakeholders to make informed decisions.



# 1. Seasonal Rainfall Forecast

The SON 2025 forecast shows a high probability of below-normal rainfall for the entire southeastern part of Ethiopia, which includes the Somali region and the Borana zone of the Oromia region shaded with orange color in the maps. A strong likelihood of consecutive dry days persisting in a region already vulnerable and struggling with climate variability. In contrast, Afar's small rainy season is expected to experience enhanced rainfall, shaded light blue on the map, suggesting a near-normal to above-normal probability. SON seasonal rainfall is temporally downscaled to monthly time steps for empowering pastoralists in sub-seasonal decision making.

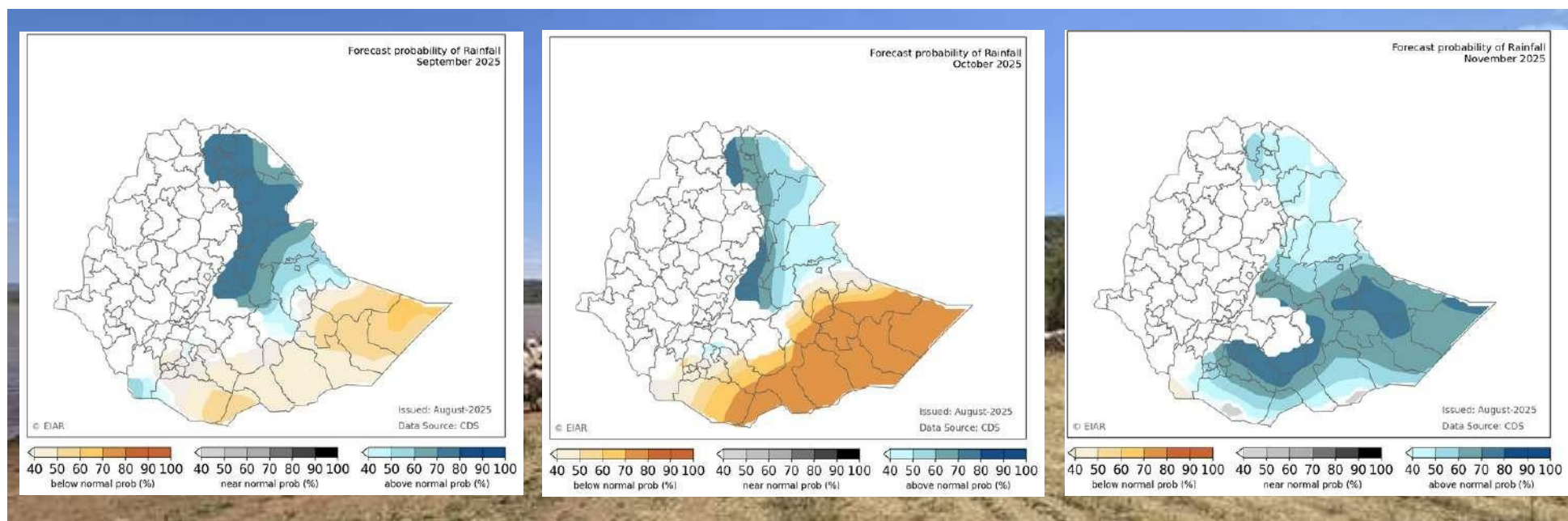


Figure 1: Sub-seasonal forecast for SON 2025 season

**September:** A late onset and normal to drier than normal rainfall is expected for the Somali region and Borana Zone while Afar region is predicted to experience a wetter than normal.

**October:** Drier-than-normal rainfall is more likely across much of the Somali region and Borana zone, which is expected to lead to water stress for communities and their livestock population.

**November:** A wet November is most likely, and it would be a relief as it would likely help to alleviate the dry conditions expected in September and October.

## Advisory

The seasonal forecast for September to November (SON) is highly variable, with a dry start and extended dry periods expected in October. However, this is likely to be followed by a wet November. Therefore, we advise to take the following measures:

- Pastoral communities should prepare to mobilize their livestock to water and feed available areas.
- In November, communities should focus on harvesting available water resources to prepare for dry periods.
- The extended dry spells that follow the rains can create conditions favorable for potential livestock disease outbreaks.
- Hence, pastoralists and other stakeholders are advised to prepare accordingly.

## 2. SON-2025 Rangeland WRSI

Pasture performance forecast for SON 2025 indicated that most areas in the Somali and Northeastern Afar regions are expected to have poor pasture coverage during the season. Specifically, the Afar region, South Omo, Borena, and southern parts of Guji, Bale, and Oromia (East and West Hararghe) are likely to experience poor conditions. However, some zones in Afar and Oromia may experience moderate to good pasture performance. To see the temporally cascaded implication of poor rainfall performance over pasture availability and hence it's advisory, please read the monthly outlook as follow:

**September:** Poor coverage is expected in the Somali region, western South Omo, Borena, and southern Oromia while Afar, in contrast, is expected to have good to very good pasture.

**October:** Rainfall conditions may improve slightly, but ongoing dry spells in the Somali and Borena zones could lead to pasture and water stress for communities and livestock.

**November:** While the Somali region pasture performance may get improved, the Afar region is likely to experience a decline as the season advances to November.

In summary, poor to very poor pasture conditions are predicted across Bega rainfall-dependent areas during SON 2025.

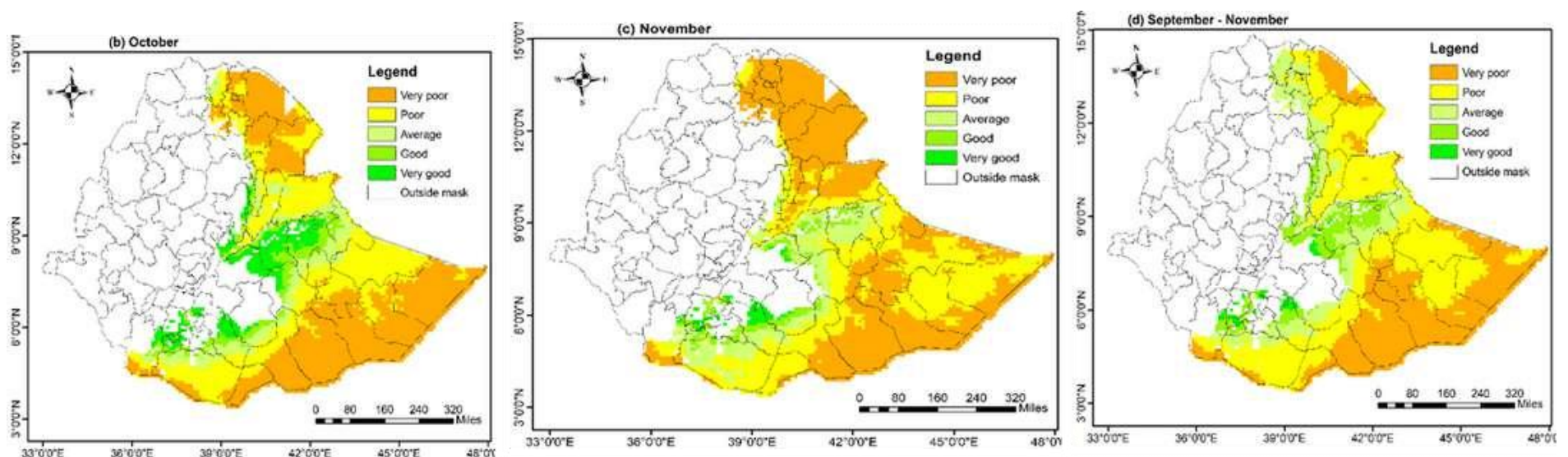


Figure 2: Expected SON Rangeland performance

## Advisory

- Due to the predicted poor pasture coverage in Somali and Northeastern part of Afar need early preparedness to avail supplementary pasture for livestock feed.
- Adopt strategic grazing plans by preparing and storing supplementary feed and crop residues, moving livestock towards moderate-to-good pasture areas.
- Local authorities and pastoralist communities should implement early warning systems by supporting measures such as fodder banks, feed distribution, and commercial destocking programs should be considered in highly affected areas.
- Overall, early preparedness and warning are essential to cope with the anticipated pasture scarcity.



### 3. Livestock Waterpoint Advisory

Water availability has improved in Jun, July and Aug (JJA) season compared to the corresponding season of 2024, largely due to the proactive interventions of the 'Aba Geda' leadership in regulating over-irrigation and water extraction.

The role of these customary institutions has been highly significant in enhancing local water governance, aligning with the objectives of pastoral climate advisories to foster community-driven initiatives. Currently most of the small seasonal water sources have already dried up during the cold dry 'Adolesa' season, while large ponds like Bake, Burra, Dembi Korba, are currently rapidly depleting. The, herders are advised to relocate their livestock to areas with available water.

Additionally, SON rainfall multi-modal ensemble probabilistic forecasts indicate the drier than the normal condition as shown bar chart (chart 1) for the monitored waterpoints in Borana zone. It is strongly recommended to take precautionary measures and manage wells and groundwater resources as efficiently as possible. Rainfall is expected to improve starting in November, with better distribution across the zone. It is therefore essential to make the most of any rainfall by harvesting it efficiently.



Figure 3: Community Information Center board at Dimtu Jarso Tuyee water point (Borana Zone)

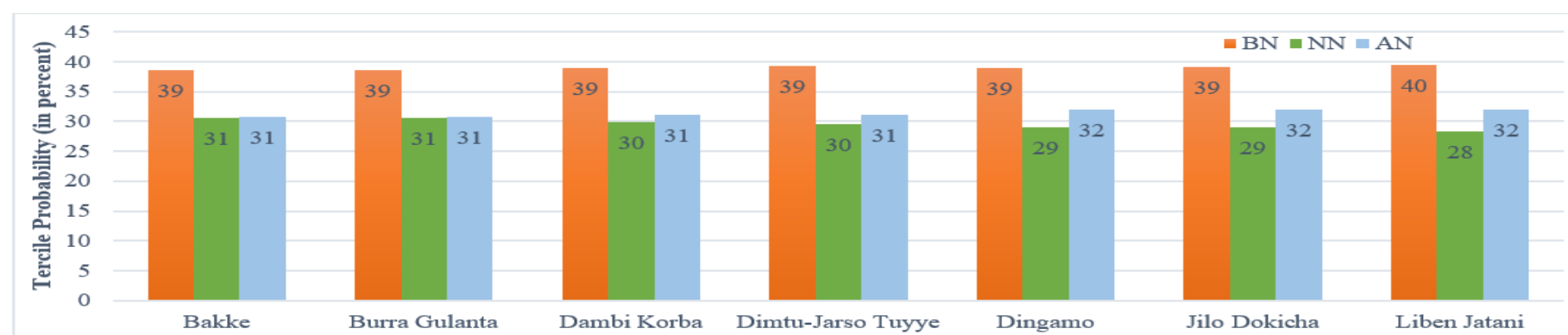


Figure 4: Chat 1 depicting monitored water points in Borana zone

## Advisory

- Combined with the low levels of water points in the Borana Zonal Administration and the SON rainfall forecast, the efficient use of available water resources is strongly advised.
- "Abba Herregas" (local water Managers) are advised to mobilize the community to clear and divert canals into the pond which critically ensure effective water collection and storage.
- It is strongly advised to treat the water with a local solution before any domestic use.
- Humanitarian organizations are encouraged to closely monitor the situation and initiate anticipatory actions for water provisioning, with a focus on supporting vulnerable and marginalized community groups.
- Water point managers and pastoralists are advised to follow the alert information on the the installed water points Community Information Center boards within Kebele centers.
- Stakeholders are advised to closely monitor the integrated rangeland and water point monitoring platform ([ET - Monitoring](#)) for planning and making informed decisions.
- For water points in alert and near-dry condition community water manager should start considering the water prioritization for week livestock and domestic uses

## 4. Temperature-Humidity Index (THI)

September to November heat stress expected to be on mild to moderate stress level in Afar and Somali regions. While mild stress is expected to prevail in the Borana zone. Pocket areas of highlands in surrounding will remain with no stress conditions. The stress forecast map shows a consistent pattern of heat stress during the month, and the combined SON seasonal map (d) confirms, the temperature forecast of WMO, showing a strong likelihood of above-normal temperatures.

Combined with mild to moderate heat stress to the projected drier rainfall in the season is expected to worsen feed shortages and pasture quality, reducing livestock productivity and heightening vulnerability to disease. To avoid potential damage to the livestock population the following interventions should be implemented.

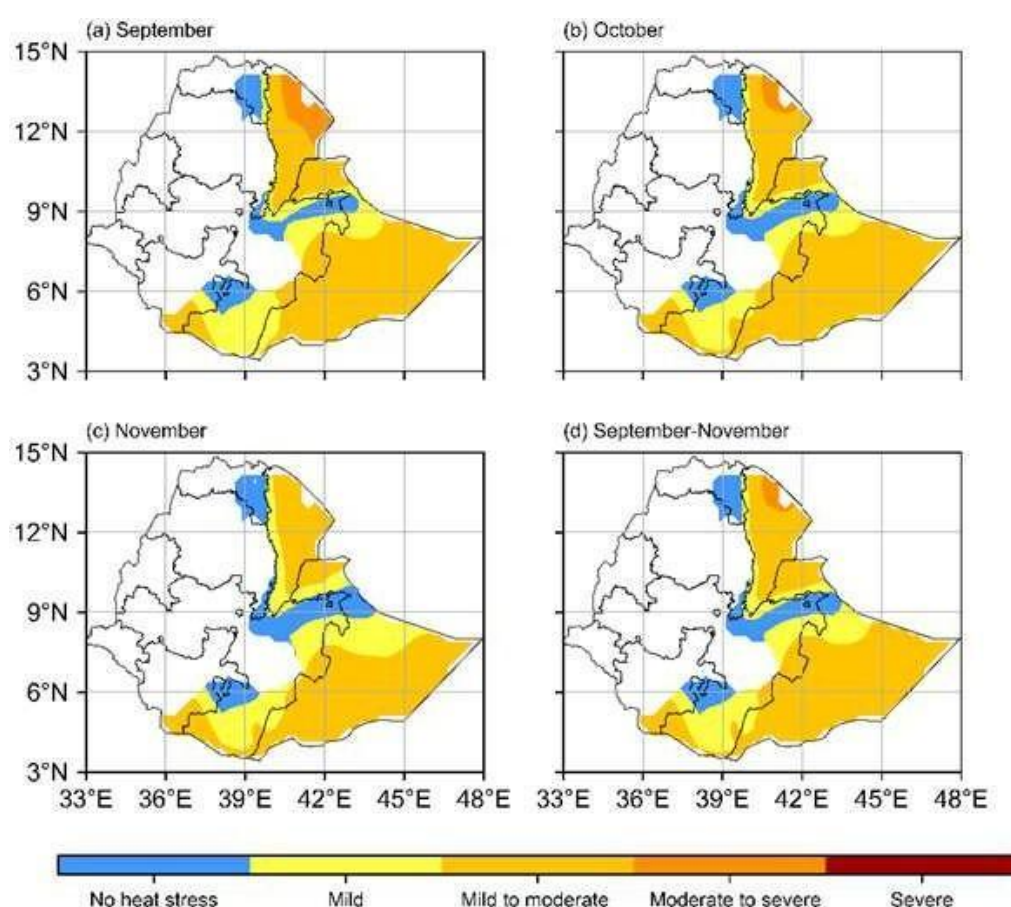


Figure 5: Livestock heat stress for September, October and November 2025

### Advisory

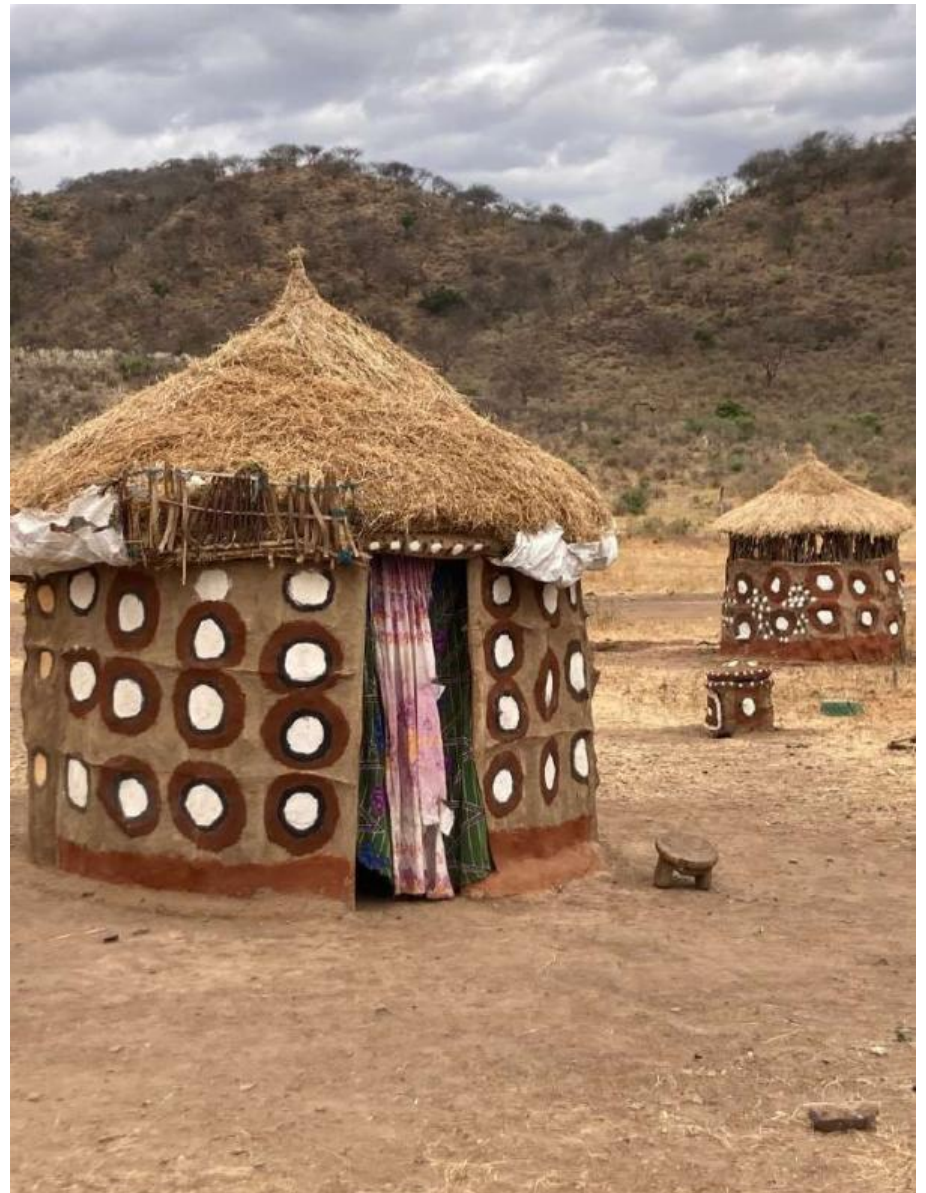
- Pastoralists are advised to provide shade or shelter for calves during the hottest hours of the day to minimize heat exposure.
- To reduce thermal stress, livestock movements should be scheduled during the cooler periods of early morning or late afternoon.
- It is strongly recommended to relocate herds to areas with adequate forage and reliable water sources to mitigate the compounded impacts of heat stress and feed scarcity.
- Pastoralists are encouraged to provide nutritional supplements and feed additives that can enhance resilience and improve livestock capacity to cope with heat stress.
- During periods of extreme heat, pastoralists may adopt controlled lactation management, prioritizing calf feeding to ensure survival. Veterinary experts should be well organized and mobilized to address and mitigate the challenges of common livestock diseases during this season such as Lumpy skin disease (LSD), Contagious caprine pleuropneumonia (CCPP), Blackleg, Mysterious camel disease (Yabello Veterinary Laboratory) as well as potential heat-related diseases outbreaks like Rift Valley Fever (RVF), Foot-and-mouth disease (FMD), Anthrax, and tick-borne diseases in the area. RVF outbreaks are often linked to climate change, specifically warmer temperatures and increased rainfall, which can create favorable conditions for mosquito vectors that transmit the disease.



## 5. Climate Security Advisory

The September–November 2025 seasonal forecast indicates predominantly below-normal rainfall across these pastoral zones, heightening concerns for regional stability and livelihoods. The livestock movement from water points to water points and from rangeland to rangeland may create security stresses to community in Borena, Somali and Afar regional administrations. This concentration of livestock and people may intensify competition over limited resources, significantly increasing the risk of inter-community disputes and violent conflict.

The Somali region is particularly vulnerable due to prolonged dryness and limited prospects for pasture regeneration. As a result, migration pressure is expected to increase toward neighbor areas with positive rainfall anomalies, which potentially lead to uncoordinated livestock movements and disputes over grazing rights and water access. Historical patterns under similar climate conditions suggest that extended dry spells tend to exacerbate existing tensions, particularly in areas where peace structures are weak, or migration corridors are challenged. Without timely intervention, these pressures could escalate into more frequent and severe local conflicts, deepen resource insecurity, and trigger displacement, ultimately threatening regional stability and pastoral livelihoods.



### Advisory

- ♦ Strengthen Community-Based Conflict Resolution Mechanisms.
- ♦ Empower local peace committees and customary institutions to mediate disputes over water and pasture. Integrate early warning systems to address tensions before they escalate.
- ♦ Coordinate Cross-Border and Inter-Community Dialogues.
- ♦ Facilitate dialogue among neighboring zones and regions to negotiate migration routes and resource-sharing agreements, reducing unplanned livestock movements and disputes.
- ♦ Support Livelihood Diversification and Resource Management
- ♦ Promote alternative income sources and sustainable rangeland management. Provide emergency water, pasture restoration, and livelihood support in the driest areas.
- ♦ Prepare Targeted Humanitarian and Security Support.
- ♦ Ensure readiness for timely humanitarian, mediation, and security interventions to prevent conflict and displacement.
- ♦ Strengthen Rapid Response Capacities.
- ♦ Prepare for the swift deployment of humanitarian and security support in emerging hotspots. Ensure the availability of feed and water distribution support to protect livestock during migration and reduce potential losses.



# Conclusion

---

The September to November 2025 rainfall forecast indicates a high likelihood of drier than the normal condition in southeastern Ethiopia, particularly in the Somali Region and Borana zone. Pasture and water shortages are expected to worsen with the drier condition through early November, despite predicted improvements in rainfall distribution later in the season. Herders are advised to take proactive measures, including relocating livestock and improving water management for available waterpoints, wells and groundwater.

In contrast, Afar region is expected to receive enhanced rainfall during its small rainy season, which resulted in average to good pasture conditions in September. However, mild to moderate heat stress is predicted across Afar, Somali and Borana on top of feed and water shortages. This may induce the livestock diseases to occur, decrease livestock productivity and may cause livestock death unless proactive protective measure is taken. Therefore, timely interventions and precautionary actions are strongly advised to safeguard pastoral livelihoods in predicted risk areas.





# Reference

---

Fauchereau N., Ramsay D., Lorrey A.M., Noll B.E (2022): Open data and open-source software for the development of a monthly multi-model ensemble to seasonal probabilistic forecast system for the Pacific Islands.

Johnson, S. J., Stockdale, T. N., Ferranti, L., Balmaseda, M. A., Molteni, F., Magnusson, L., Monge-Sanz, B. M. (2019). SEAS5: the new ECMWF seasonal forecast system. *Geoscientific Model Development*, 12(3), 1087-1117.

Peter H, Sandro C (2012). LEAP (Livelihood, Early Assessment, and Protection) version 2.61 software user manual designed for the calculation of water requirement satisfaction index. World Food Program, FAO, Italy Plant Production and Protection. Paperno. 17 (Rome: FAO).

Senay BG, James PV, James R (2011). Developing an operational rangeland water requirement satisfaction index. *Int J Remote Sens* 32:6047–605

Segele, Z. T., Lamb, P. J., & Leslie, L. M. (2009). Large-scale atmospheric circulation and global sea surface temperature associations with Horn of Africa June-September rainfall. *International Journal of Climatology*, 29(8), 1075.

Senay, G.B. and Verdin, J., 2003. Characterization of yield reduction in Ethiopia using GIS-based crop water balance model. *Canadian Journal of Remote Sensing*, 29(6), pp.687-692.

