

SOMALIA CLIMATE OUTLOOK FOR THE 2024 DEYR “SHORT RAINS” SEASON

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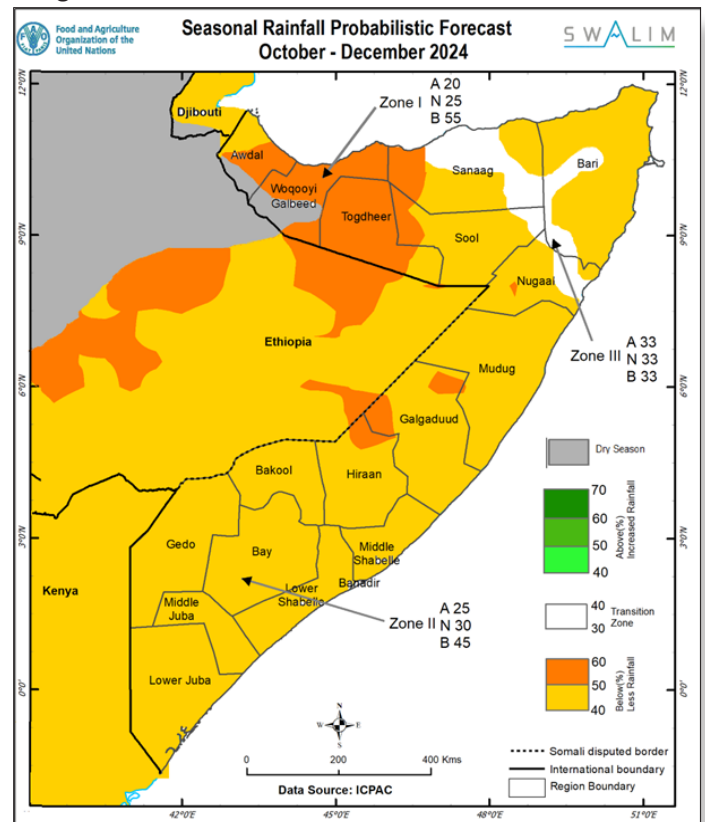
There is a high likelihood of below-normal rainfall driven by La Niña conditions and a high probability of a delayed onset of rains in the southern and central parts of the country.

Key Highlights

Somalia’s Deyr (October - November - December) “short rains” season is associated with the somewhat-faster southward movement of the Inter-Tropical Convergence Zone (ITCZ) which dictates much of the country’s climate. Given the recent evolution of colder than average Sea- Surface Temperatures (SSTs) over the central and eastern equatorial Pacific Ocean, most global climate models forecast the development and persistence of La Niña conditions throughout the October - November - December 2024 season. However, normal SSTs have been observed in the Indian Ocean waters, which technically defines a neutral Indian Ocean Dipole (IOD).

According to ICPAC, the October-November-December forecast indicates a high likelihood of below-normal rainfall (*Map 1*) driven by La Niña conditions. Additionally, there is a 60%+ probability of a delayed onset of rains in the southern and central parts of the country (*Map 3*). These challenges are further compounded by above-normal temperatures (*Map 4*), which, combined with below-normal rainfall, are expected to lead to a severe loss of soil moisture due to increased evapotranspiration. This will have serious implications for crop and fodder production, particularly in regions reliant on rainfed agriculture and pastoralist activities. Without adequate moisture retention, soil conditions will worsen, directly impacting food and fodder availability for both human and livestock populations.

While it is acknowledged that there are inherent uncertainties associated with seasonal forecasting, this uncertainty should not be an excuse for inaction. Instead, the uncertainties must be met with flexibility and preparedness, ensuring that proactive steps are taken to safeguard communities and sectors at risk



Map 1: Probabilistic Deyr (October-November-December) 2024 Rainfall Forecast over Somalia

Deyr Weather forecast

According to ICPAC, the **probabilistic** October - December forecast indicates a high likelihood of below-normal rainfall over Somalia particularly northern and central regions (*Map 1*) driven by La Niña conditions. Some areas of northern Somalia might experience an equal probability (33%) of below-normal, normal, or above-normal rainfall.

The **deterministic** rainfall forecast for the October-December 2024 season (*Map 2*) highlights significant spatial variability across Somalia. Northern and central regions are likely to remain relatively dry with minimal

rainfall, while southern regions, particularly along the Juba and Shabelle River basins, are expected to receive moderately heavy rainfall cumulatively leading to above 200 mm in parts of Lower Juba and Kenyan border areas. The spatial distribution of the Deyr rainfall forecast (*Map 2*) is as follows:

Light Rainfall of Less than 50 mm is expected in the northern and northeastern, and some parts of Central Somalia. These regions include Awdal, Woqooyi Galbeed, Togdheer, Sanaag, Sool, Mudug and Galgaduud.

Moderate Rainfall of Between 50 mm and 100 mm is forecast over Central Somalia, parts of South-Central Somalia, and parts of the Shabelle River basin. These areas include Hiraan region, particularly the areas around Beledweyne, Middle Shabelle and Lower Shabelle regions, and the northern parts of Gedo region.

Heavy Rainfall of Between 100 mm and 200 mm is expected over Southern Somalia, including Lower Juba, Lower Shabelle, Bay, Bakool, Hiraan regions, parts of Middle Shabelle and southern parts of Gedo region and parts of Ethiopia including Juba and Shabelle River catchments. The rains over southernmost Somalia, including parts of Lower Juba, and its border areas with Kenya are likely to exceed 200 mm in cumulative terms.

Forecast Rainfall Onset Dates

While the ITCZ driven Deyr rains are expected to progress from the northern parts of the country towards the south in tandem with the apparent North-to-South movement of the overhead Sun, rains are also expected to commence in the south. However, based on long term average onset dates, Deyr rains are predicted to be late over southern Somalia.

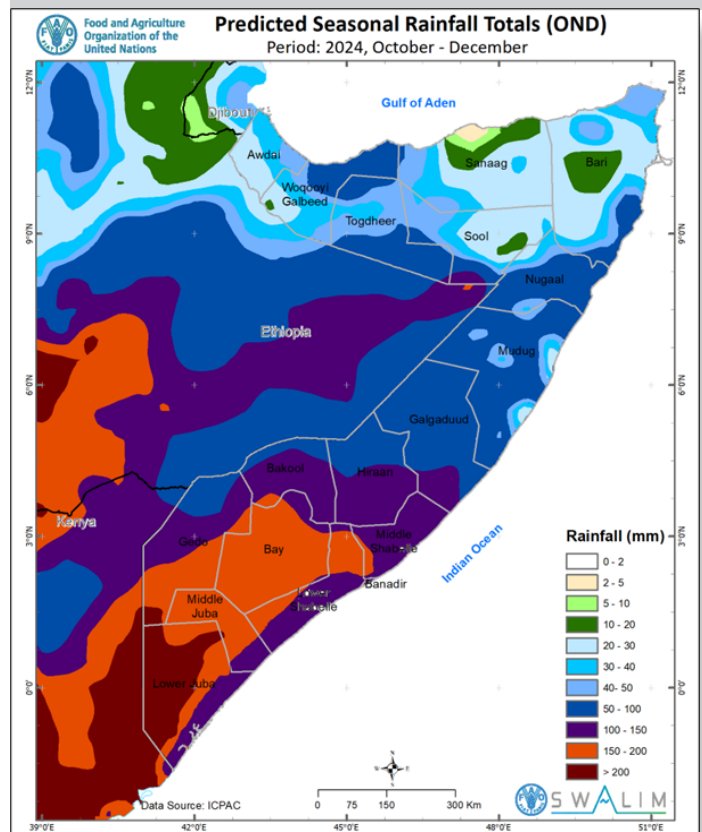
The continuation and southeastward progression of the Hagea/Karan rains and the onset of the Deyr rains in **late September** over the northern parts of the country, ideally explains the almost-unimodal distribution of rains particularly in Somaliland. In the **first week of October** (September 29 – October 9), the rains will move towards Puntland including Iskushuban and Qardho districts in Bari region; Garowe and Burtinle districts in Nugaal region; Gaalkacyo and Galdogob districts in Mudug region and Cabudwaaq district in Galgaduud region. Rains will also begin at the same time in Jilib district in Middle Juba region; Baraawe, Sablaale, Marka, and Qoryooley districts in Lower Shabelle region and along the coastal parts of Badhaadhe, Kismaayo and Jamaame districts in Lower Juba region.

The rains will then move eastwards in the second to third week of October (9 – 19) to Bandarbeyla district in Bari region; Eyl district in Nugaal region; Jariiban and Hobyso districts in Mudug region. The rains will also shift southwards during the same period to Cadaado, Dhuusamarreeb, Ceel Buur, Xarardheere and Ceel Dheer districts in Galgaduud region, Hiraan, Middle Shabelle, Banadir, Bay, and Bakool regions, Afgoye and Wanla Wayne districts in Lower Shabelle region; Luuq and Garbahaarey districts in Gedo region; Buulle district in Middle Juba region and Afmadow district in Lower Juba region.

Drivers of seasonal climate

Somalia's Deyr (October-December) "short rains" season is associated with the fast southward movement of the Inter-Tropical Convergence Zone (ITCZ) which dictates much of the country's climate. On its slower northward shift, the ITCZ delivers much longer Gu rains. In both wet seasons, the rain is produced as the low level moist airmass from the Indian Ocean converges at the ITCZ, is lifted upwards convectively, forming precipitating clouds. During the Deyr season, the cloudiness form as early as September over the northwestern parts and in the coastal southern parts, but significant rainfall onset begins in the last week of September and the first week of October. In the south, the rains progress northwards while in the northwest they move eastwards. The Deyr rainfall ends in the first half of December to signal the onset of the hot and dry Jilal season.

Given the recent evolution of colder than average Sea-Surface Temperatures (SSTs) over the central and eastern equatorial Pacific Ocean, most global climate models forecast the development and persistence of La Niña conditions throughout the October - December 2024 season. However, normal SSTs have been observed in the Indian Ocean waters, which technically defines a neutral Indian Ocean Dipole (IOD). The IOD is therefore expected to contribute less to the variability of Deyr 2024 rains. However, the MJO, a large-scale atmospheric disturbance that moves eastward around the equator, is expected to influence the week-by-week variation of Deyr 2024 rains.



Map 2: Deterministic Deyr (October-November-December) 2024 Rainfall Forecast

In the **fourth week of October (19 – 29)**, Deyr rains will shift to Doolow, Belet Xaawo, Ceel Waaq and Bardheere districts in Gedo region and Saakow district in Middle Juba region.

Given the vital role of MJO in modulating Deyr rainfall, continuous monitoring and forecasting of its phases will be critical for anticipating rainfall variability, managing drought events while preparing for any flash flooding.

Temperature Forecast

There is very high chance that the temperatures will be above normal over the country with up to 90 % likelihood particularly in the norther eastern parts of the country (Map 4).

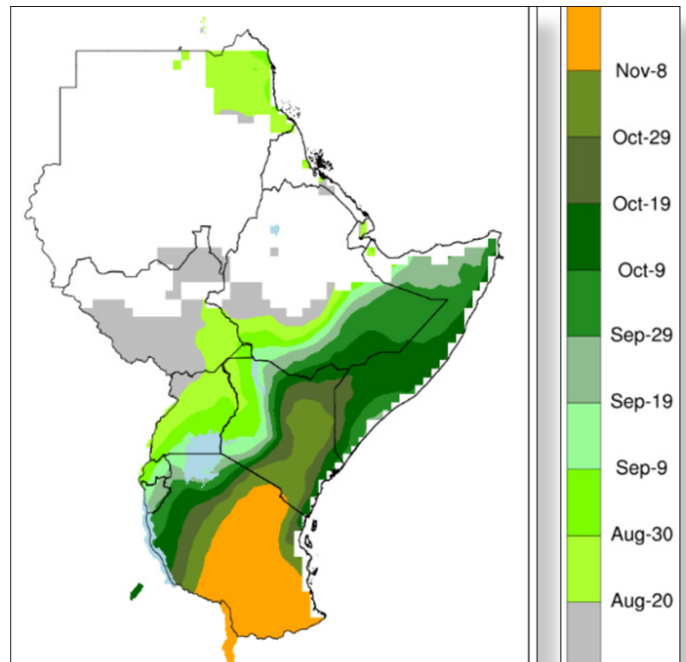
Implications on Livelihoods and Programming

Different regions and livelihood zones will be impacted differently by the Deyr climate forecast (Table 1). Geographically, trend analysis suggests that Somaliland has benefited from a relatively good Gu and Karan rains in the last six (6) months, leading to better soil moisture retention and lower current drought hazard over most parts of the region. The accumulated good soil moisture means that even with below-normal Deyr rainfall, vegetation and water sources will continue to benefit from this moisture for a time. In other words, the lag effect of soil moisture and vegetation health means that the impact of below-normal rainfall will be less immediate and less severe. In contrast, southern, central regions and Puntland are entering the Deyr season with depleted soil moisture and higher vulnerability. The forecasted below-normal rainfall is likely to exacerbate drought conditions, making drought a significant concern. The equal probability (33%) of below-normal, normal, or above-normal rainfall over some areas in northeastern Somalia makes it challenging to predict specific outcomes for these regions.

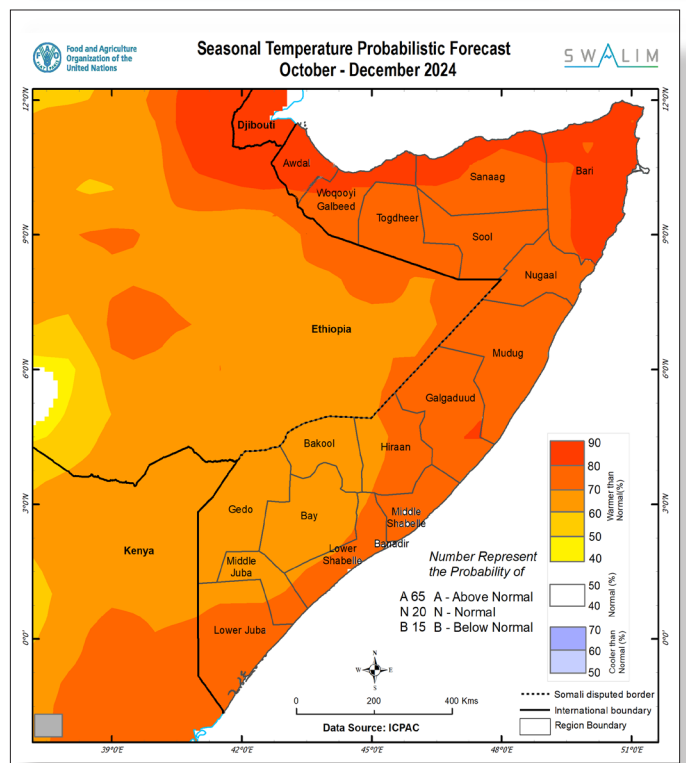
Based on sectoral analysis, crop, and livestock production are at high risk due to the combined effects of water scarcity, delayed rains, and increased temperatures. There is a strong need to **promote drought-resilient agricultural practices and introducing measures to protect soil moisture**, such as improved irrigation systems and soil conservation techniques. These will be pivotal in sustaining agricultural productivity amid the harsh conditions.

Water sources will be under significant strain, especially in areas dependent on seasonal rivers. There is therefore need for **prioritization of water conservation techniques**, including optimizing irrigation systems and protecting critical water sources to meet the needs of both agriculture and households during the dry season.

Given the known sensitivity of the aviation industry, it is equally important to **factor in climate information into**



Map 3: Expected average Deyr 2024 Rainfall onset dates over Somalia



Map 4: Probabilistic Deyr (October-November-December) 2024 Temperature Forecast over Somalia

aviation flight planning, especially in the context of severe weather risks. Emphasize should be placed on the role of aviation in disaster preparedness, enabling the rapid deployment of humanitarian aid in response to extreme weather events.

The role of both public and private media in effective communication in disseminating early warnings and raising public awareness about climate risks is critical. **Media's collaboration with government agencies and humanitarian organizations will be crucial** in ensuring that communities receive timely information that enables them to take protective action.

Livelihoods	Impact of Observed Gu and Hagea Rains	Potential Impact of Forecast Deyr Rainfall
Pastoral	Moderate recharge of water sources, improvement of soil moisture conditions likely to have supported grassland regeneration and offered fodder for the livestock and timely planting and other agricultural activities over Somaliland and some parts of southern Somalia	<ul style="list-style-type: none"> Poor pasture regeneration and water shortages likely Potential increase in livestock mortality Reduced household incomes Displacement and abnormal livestock migration in search of better resources. The movement of pastoralists in search of water and pasture may increase the risk of resource-based conflicts, particularly in areas where resources are already limited
Agropastoral		<ul style="list-style-type: none"> Reduced crop yields expected due to shorter growing season occasioned by delayed and below-average rainfall Heightened risk of food insecurity Increased dependence on imported food
Riverine	<p>Flooding at Belet Weyne in May 2024 and Belet Weyne, Jowhar, Balad and Afgoye in September 2024 led to some farmland and property damage. After recovery from flood, pests' infestation has been reported leading to crop ruin.</p> <p>Flooding along the Juba River at Doolow led to some farmland and property damage in May 2024</p>	<ul style="list-style-type: none"> Potential negative impact on irrigation and crop production due to reduced river flows Increased likelihood of breakages for water access Water resource management will be critical
Urban	Moderate recharge of water sources, and enhancement of soil moisture conditions, improved the vegetative cover over highly urbanized areas thus mitigating against windblown natural dust and urban particulates, and supported daytime breeze in improving thermal comfort, thus reducing AC power demand	<ul style="list-style-type: none"> Water shortages and increased food and water prices expected Risk of heat and hygiene related illnesses particularly among vulnerable populations such as the elderly and children Displacement from rural to urban centres Vulnerable populations may require humanitarian assistance

Table 1: Different regions and livelihood zones will be impacted differently by the Deyr climate forecast

This bulletin is co-produced by the Federal Government's Ministry of Energy and Water Resources (MoEWR), The Somali Disaster Management Agency (SoDMA), Ministry of Agriculture and Irrigation (MoAI), Ministry of Livestock Forestry and Range (MoLFR), Ministry of Environment and Climate Change (MoECC), The Food and Agriculture Organization of the United Nations (FAO), World Meteorological Organization (WMO), The IGAD Climate Prediction and Applications Centre (ICPAC) and Somali Civil Aviation Authority (SCAA).

Users are advised that this is a seasonal outlook for the entire country, and there may be discrepancies between estimates and actual amounts of rainfall received. Local, month-to-month and week-by-week variations might occur as the Deyr season progresses. FAO-SWALIM in collaboration with the Somalia Government and other partners will provide detailed state-level monthly and weekly updates regularly, and daily and near-real-time advisories when need arises. Weather forecast and observed river levels are updated daily and can be found on this link: <http://frrims.faoswalim.org>

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