Food and Agriculture Organization of the United Nations

SWALIM
Somali Water and Land Information Management

DEYR 2023 CLIMATE OUTLOOK AND ITS IMPLICATION ON LIVELIHOODS AND PROGRAMMING OVER SOMALIA

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Key Highlights

Given the recent evolution of warmer than average Sea- Surface Temperatures (SSTs) over the central and eastern equatorial Pacific Ocean, most global climate models have confirmed the presence and persistence of El Niño conditions throughout the October - December 2023 season. Moreover, similar warming of ocean waters near the East African coastline, together with cooling down of the waters near the western Australian coastline, which technically defines a positive Indian Ocean Dipole (IOD), is expected to lead to above normal rains over most parts of East Africa. Somalia's Deyr (October - 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.

According to ICPAC, the climate outlook for the "Deyr Short Rains" season indicates an exceptionally high likelihood (85 %) of enhanced rainfall over southern parts of the country encompassing the catchments of both Juba and Shabelle Rivers where up to 10 consecutive rainy days are probable. Upstream of the river catchments across the Ethiopian border, 4 - 6 consecutive rainy days are expected with higher likelihood of cumulative amounts exceeding 150 mm.

In terms of associated risks, the enhanced amounts, more so consecutive rainy days, over Juba and Shabelle River catchments within the country and across the Ethiopian border will likely lead to flooding as from the third week of October. However, the forecast dry conditions over the southern parts of Somalia where the two river catchments lie in the month of September offer some lead time for intervention measures to be put in place to mitigate the potential flood risks.

The forecast dry conditions over the agricultural zones in the southern parts of the country in the month of September are also opportune for land preparation. The subsequent rains will likely lead to substantial recharge of water sources, replenished water catchment levels, and improved soil moisture conditions. These will create favorable conditions for grass regeneration, offering fodder for the livestock, and timely crop planting across the agro-pastoral livelihoods.

DEYR WEATHER FORECAST

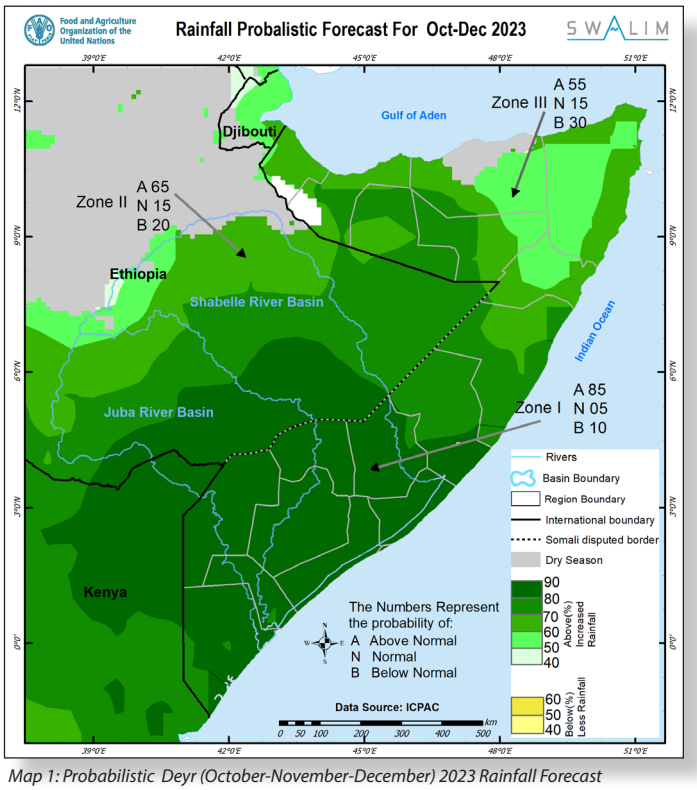
Probabilistic Rainfall Forecast

Somalia's Deyr (October-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. 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 warmer than average Sea Surface Temperatures (SSTs) over the central and eastern equatorial Pacific Ocean, most global climate models have confirmed the presence and persistence of El Niño conditions throughout the October-December 2023 season. Moreover, similar warming of ocean waters near the East African coastline, together with cooling down of the waters near the western Australian coastline, which technically defines a positive Indian Ocean Dipole (IOD), is expected to lead to above normal rains over most parts of East Africa. The spatial and temporal distribution of the Deyr rainfall forecast *(Map 1)* is as follows:

There is **exceptionally high likelihood (85 %) of enhanced rainfall** over southern parts of the country encompassing Lower Juba and Middle Juba regions, Lower Shabelle and Middle Shabelle regions, Gedo region, Bay region, Bakool region and Hiran region.

It is important to point out that such enhanced rains will fall over the catchments of both Juba and Shabelle Rivers. There is **up to 100 % likelihood of the cumulative rain amounts exceeding 300 mm** over the Juba River basin within the country. These rains will translate to up to 50 % more than average, or one and half times the average rainfall. Over most parts of these areas, **longer-than-usual wet spells** are expected with 6 – 10 consecutive



Map 1: Probabilistic Deyr (October-November-December) 2023 Rainfall Forecast

rainy days probable. Upstream of the river catchments across the Ethiopian border, 4 - 6 consecutive rainy days are expected with higher likelihood of cumulative amounts exceeding 150 mm.

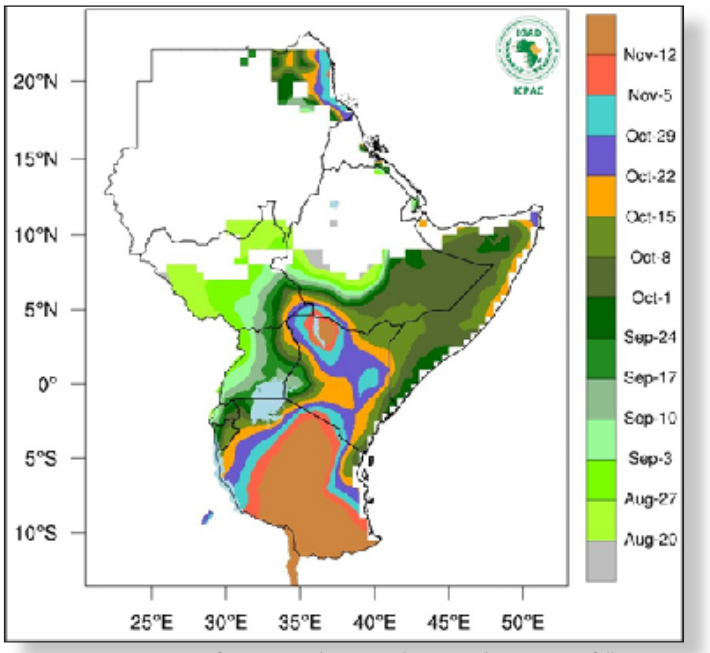
There is **moderately high likelihood (60 % to 80 %) of enhanced rainfall** over Galgaduud region, Mudug region, Togdheer region, Burtinle and Eyl districts in Nugal region, Las Anod, Xudun and Caynabo districts in Sool region, Ceel Afweyn district in Sanaag region, Owdweyne, Sheikh and Berbera districts in Woqooyi Galbeed region, Zeylac, Lughaye and Baki districts in Awdal region, and the coastal parts of Bari region. Over most parts of these areas, 4 – 6 consecutive rainy days are likely to be observed with up to 10-days long wet spells over Sheikh and Berbera districts in Woqooyi Galbeed region.

There is a **moderate likelihood (55 %) of enhanced rainfall** over Garowe district in Nugaal region, Taleex district in Sool region, Ceerigaabo district in Sanaag region and Laasqoray and Qardho districts in Bari region. There is equal chance of above-, below-, and normal rains over Borama district in Awdal region, and Gebiley and Hargeisa districts in Woqooyi Galbeed region (white coloration in Map 1). Based on climatology, the 55 % chance of above normal rains means that more than 50 mm is expected over a larger portion of elevated terrains in the north. Over most parts of these areas, up to **6 days-long wet spells** are expected.

Below normal rains to dry conditions *(grey coloration in Map 1)* are expected over the northern parts of Ceerigaabo district in Sanaag region.

Forecast Rainfall Onset Dates

While cloudiness is expected as early as September over the northwestern parts and in the coastal southern parts of the country, onset of significant rainfall (*Map 2*) is expected in the last week of September from Badhaadhe, Kismaayo and Jamaame districts in Lower Juba region, Jilib district in Middle Juba region and the coastal parts of Lower Shabelle region. These rains will then progress northwards to Buálle district in Middle Juba region, Middle Shabelle, Bay, Hiran and Bakool regions and over the upstream of Shabelle River catchment across the Ethiopian border in the first week of October. By the second week of October the rains will be observed over Gedo region and over the upstream of Juba River catchment across the Ethiopian border with the latest onset over the western parts of Afmadow district in Lower Juba region. In the north the rains are also expected to begin in the last week of September over Xudun and Taleex districts in Sool region radiating outwards in the first week of October to the entire Sool and Togdheer regions, southern parts of Sanaag region, western parts of Bari region, and western parts of Galmudug. This outward spread of the rains means that the onset will be observed in the entire eastern coastal areas of Puntland, and over Zeylac district in Awdal region in Mid-October. The latest onset will be observed in the second half of October in Caluula and the northern parts of Iskushuban district in Bari region.



Map 2: Forecast Onset Dates for Deyr (October-November-December) 2023 Rainfall

Implications on Livelihoods and Programming

In terms of associated risks, the enhanced rainfall amounts expected in six (6) consecutive days over Juba and Shabelle River catchments within the country and across the Ethiopian border and flowing downstream into already saturated soils will be a recipe for a disastrous riverine flood from the third week of October. Although moderate in amount, rainfall intensities during the probable 6-days long wet spells over elevated sloppy terrains in the north may generate run off flowing into urban landscapes posing risk for flash flooding in areas such as Qardho. As part of the timely and accurate early warning system, anticipatory action for riverine and flash flooding must be activated in these areas, respectively. Fortunately, the forecast dry conditions over the southern parts of Somalia where the two river catchments lie in the month of September offers some lead time for intervention measures to be put in place to mitigate the risks.

The forecast dry conditions over the agricultural zones in the southern parts of the country in September are also opportune for land preparation. The subsequent rains will likely lead to substantial recharge of water sources, replenished water catchment levels, and improved soil moisture conditions. This will create favorable conditions for grass regeneration offering fodder for the livestock, and timely crop planting across the agro-pastoral livelihoods. The enhanced probability of warmer-than-usual temperatures over the northern parts of the country will result to excessive evaporation thereby limiting soil water availability of crop and fodder generation.

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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