

Late February Kenya Subseasonal Forecast Update: Suggests Early Start of Season in western and central Kenya

2/22/2026



Climate
Hazards
Center
UC SANTA BARBARA





UCAR

(3D PAWS, IBF)



- CHIRPS3
- SubC Forecasts
- System Integration



(Dynamic Forecasting)



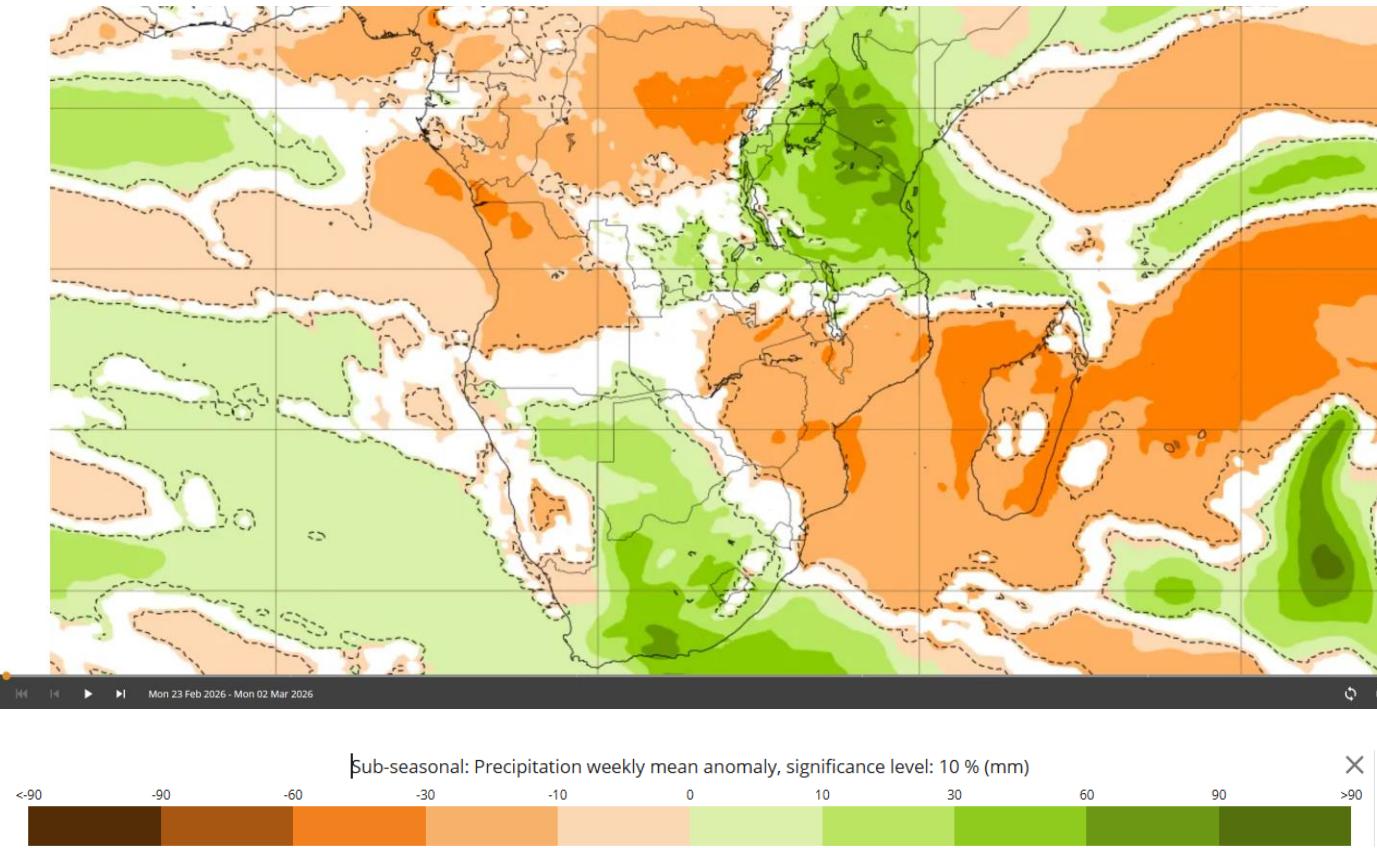
(Onsets AI Forecasting)

Improved Monthly and
Sub-Seasonal Forecasts

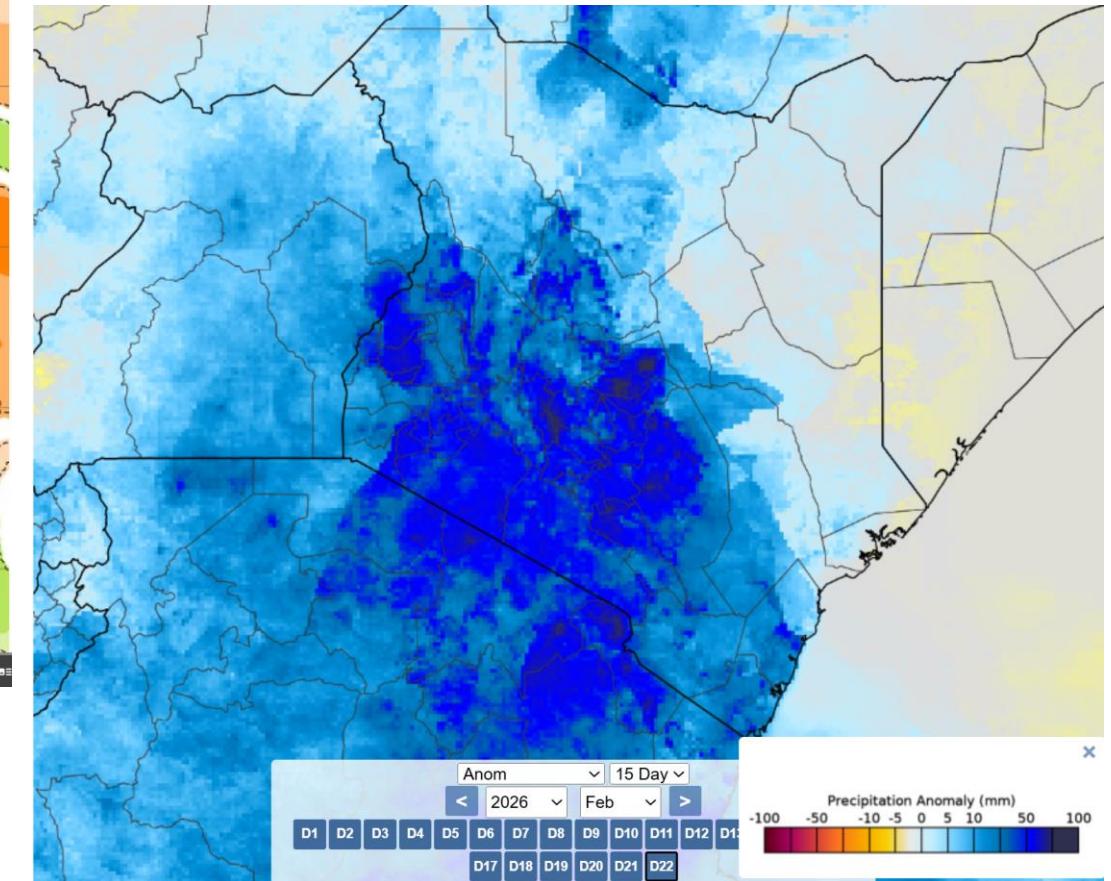
Improved Agricultural Advisories

Improved Flood Alerts

Current forecasts suggest that late February rains are likely to be very exceptional over western Kenya

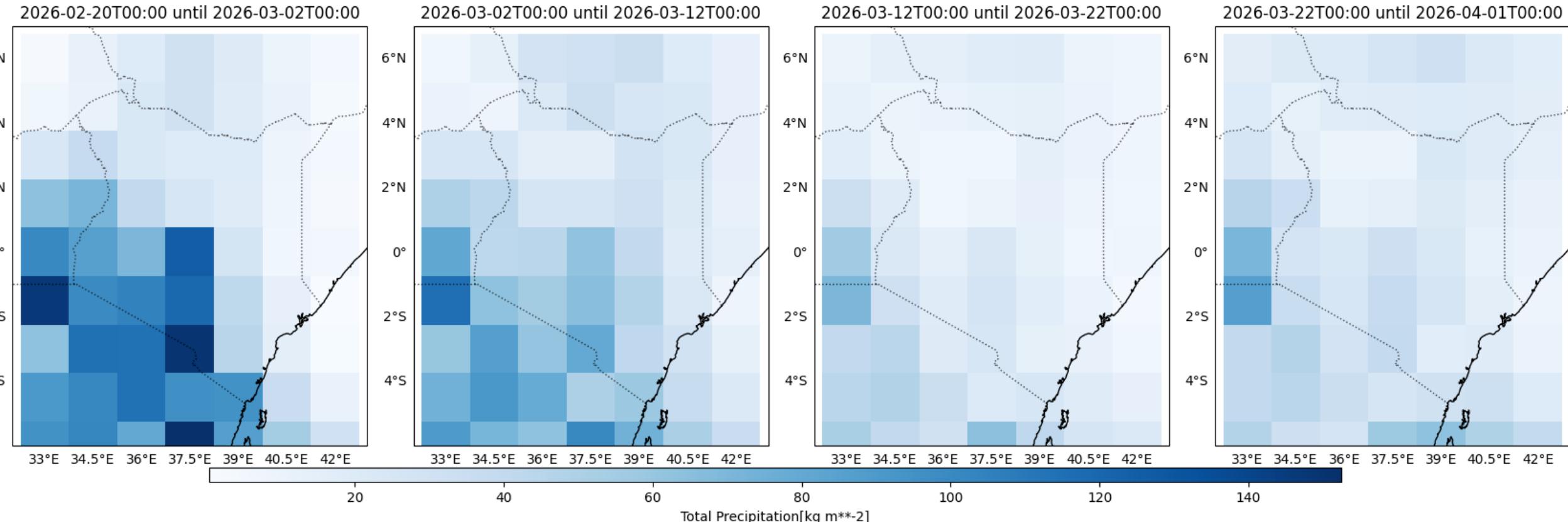


Feb 23 to March 2nd ECMWF sub-seasonal rainfall
Forecasts anomalies
Accessed February 22nd



Feb 23 to March 2nd CHIRPS-GEFS 15 day rainfall
Forecast anomalies
Accessed February 22nd

ECMWF Forecast from KIT/KMD Collaboration



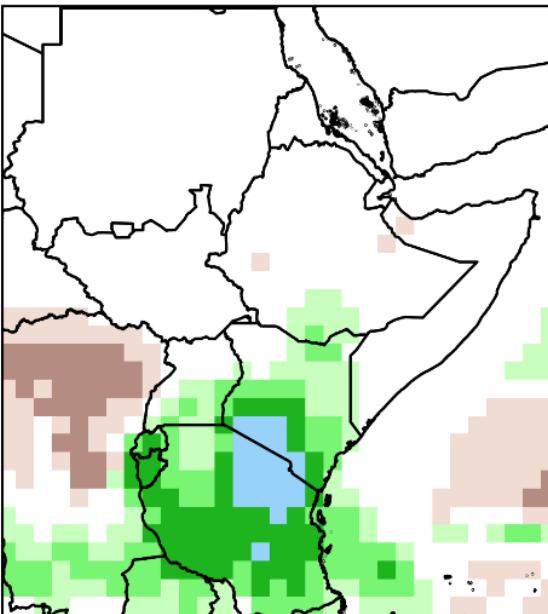
https://github.com/alecjong-lab/ECMWF-S2S4AFRICA/blob/main/plots/Kenya/2026-02-20/dekadal/dekadal_precip.png

CHC SubC Forecast Ensemble

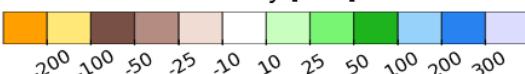
SubC 15-Day Precipitation Forecast Anomaly

Period: 2026-02-22 - 2026-03-08

Multi-Model Ensemble Anomaly

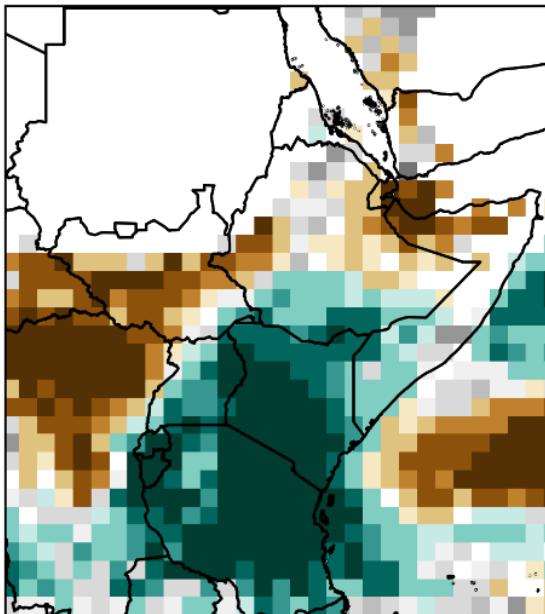


Anomaly [mm]

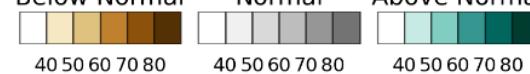


-200 -100 -50 25 10 25 50 100 200 300

Multi-Model Ensemble Tercile Probability



Below Normal Normal Above Normal

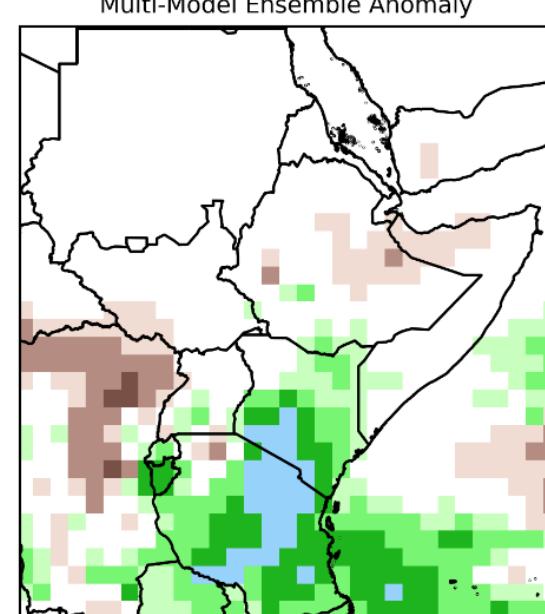


40 50 60 70 80

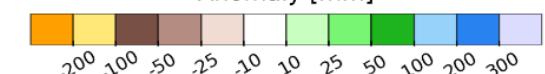
SubC 30-Day Precipitation Forecast Anomaly

Period: 2026-02-22 - 2026-03-23

Multi-Model Ensemble Anomaly

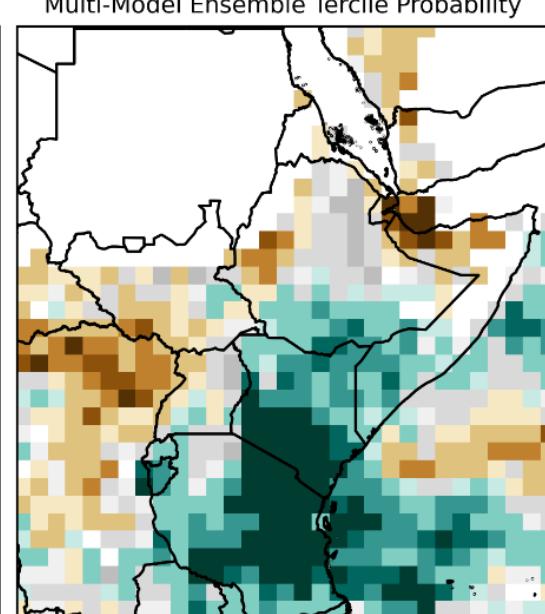


Anomaly [mm]

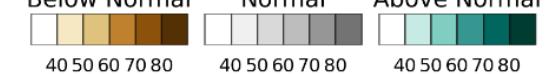


-200 -100 -50 25 10 25 50 100 200 300

Multi-Model Ensemble Tercile Probability



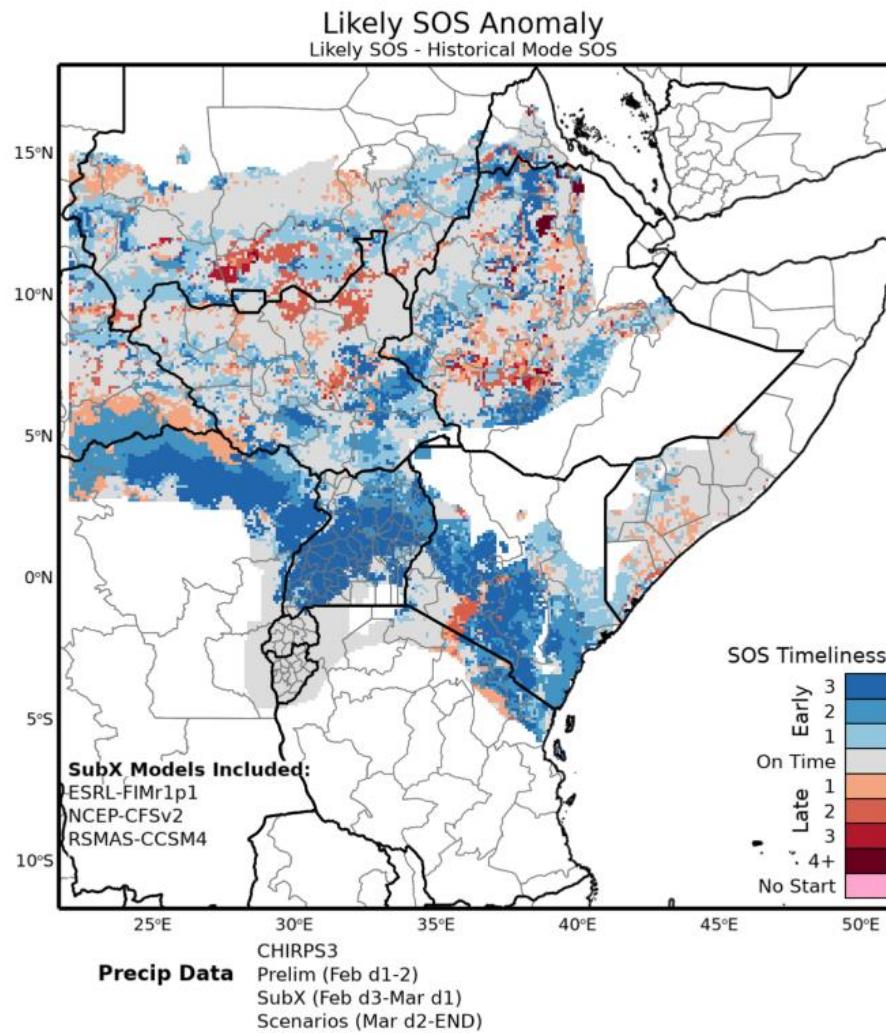
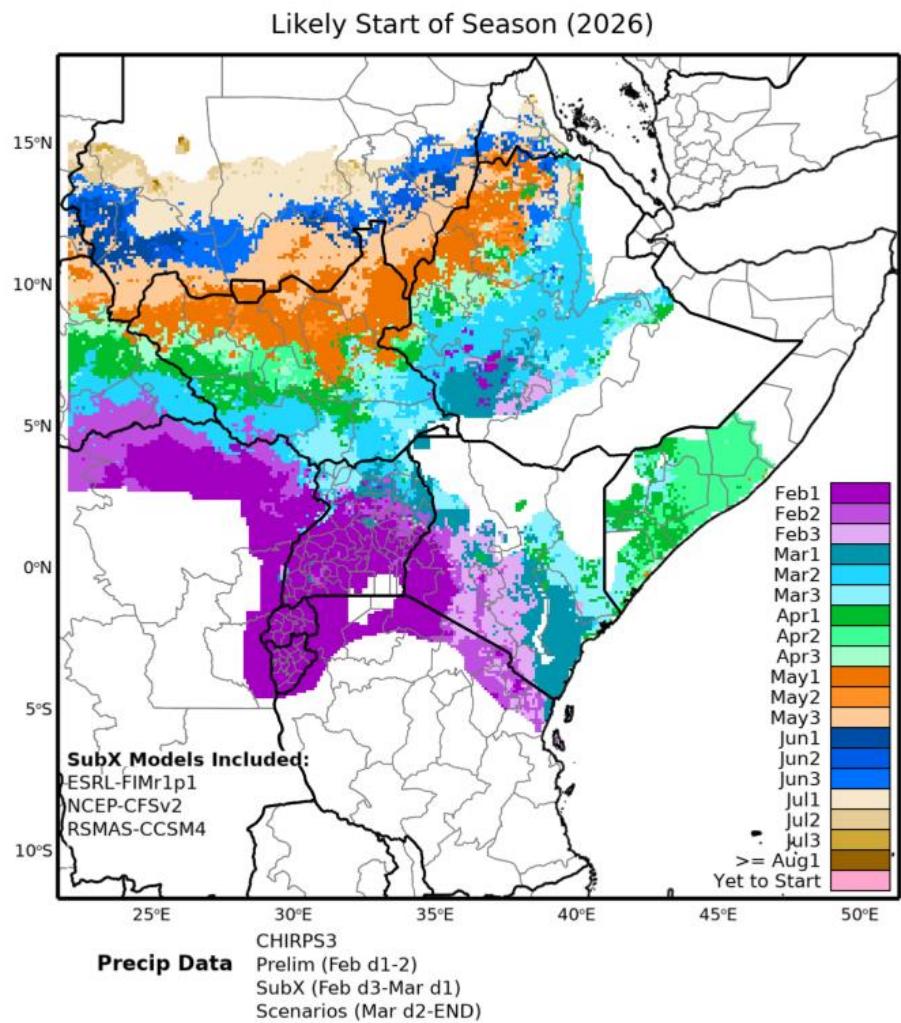
Below Normal Normal Above Normal



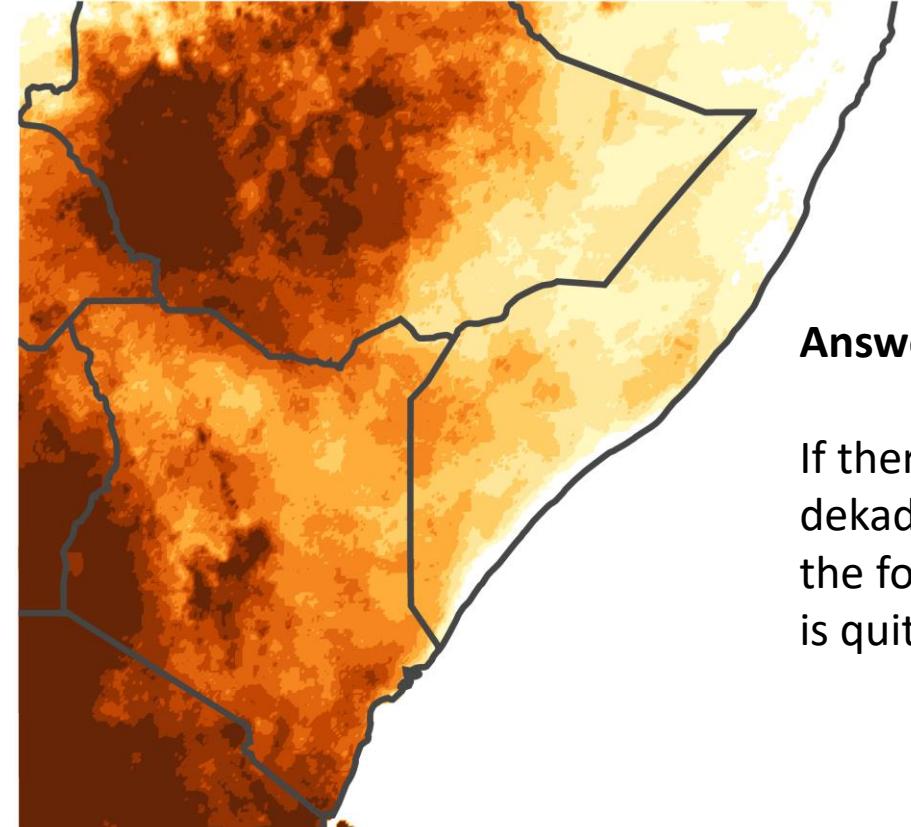
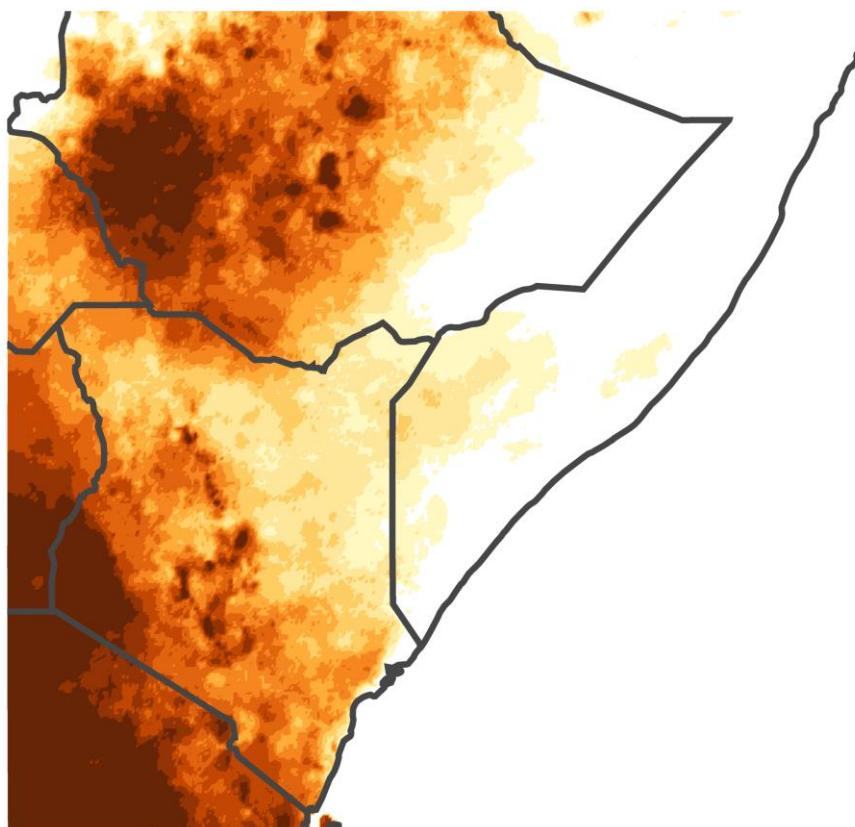
40 50 60 70 80

High chances of above-average rains are forecast in Kenya during late February and March

CHC SubC likely Start of Season

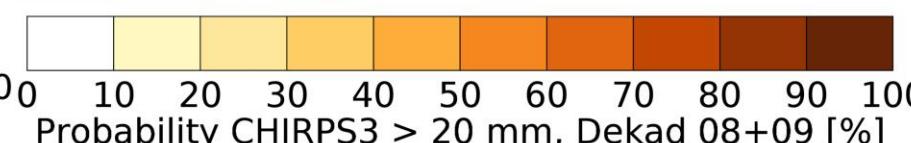
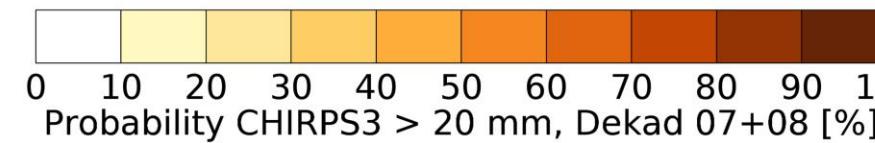


Question: IF the last dekad of February or 1st dekad of March is wet (>25 mm), how likely is a reasonably wet (>20 mm) 2 dekad period thereafter?



Answer?

If there is abundant rain in the first dekad of March, then the chance of the following 2 dekads getting 20 mm is quite good, especially in highland areas



Analysis based on 2005-2025 CHIRPS data

Question: Where do ECMWF S2S rainfall forecasts suggest that a Start of Season is Likely?

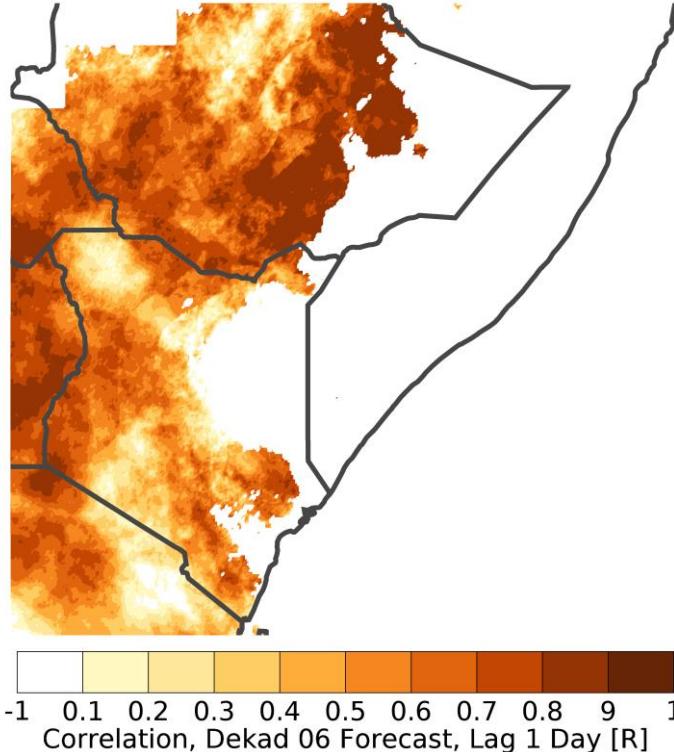
'Start of Season' is defined here as a dekad with >25 mm of rain, followed by 2 dekads receiving at least 20 mm of rain

We are working with ECMWF rainfall forecasts, downscaled to 0.05° using CHIRPS3 and quantile matching

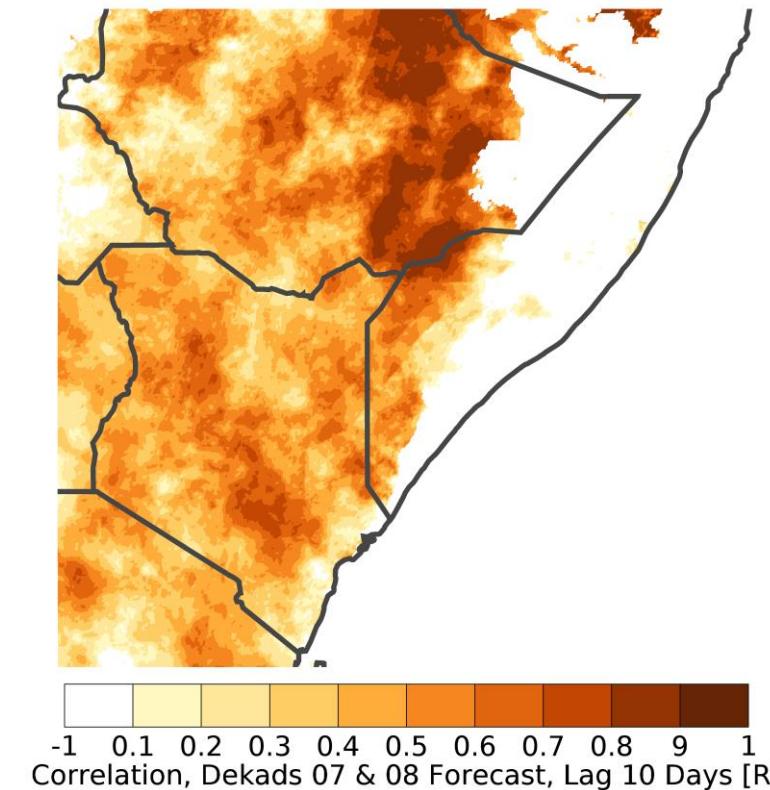


Correlation Maps – ECMWF and CHIRPS

Screened based on mean rainfall



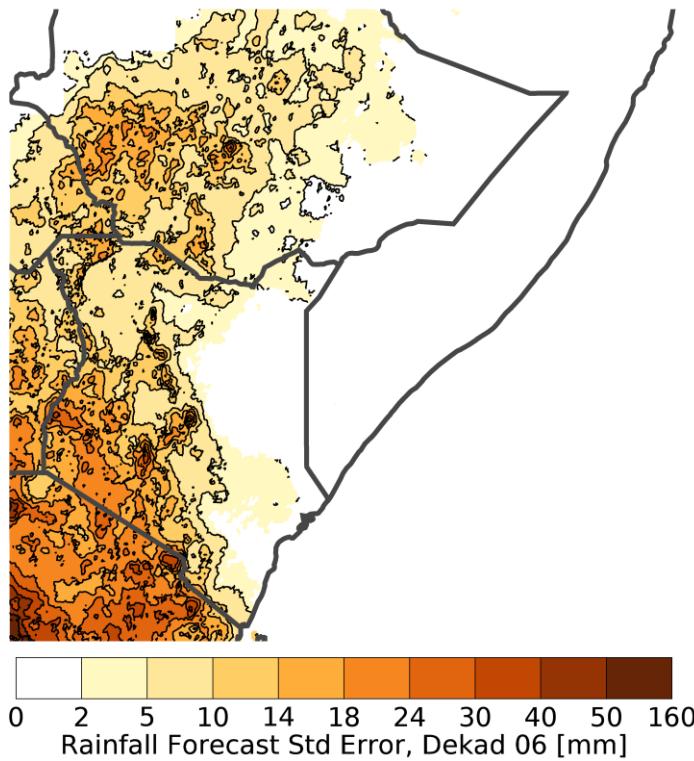
Feb 21-28 rainfall



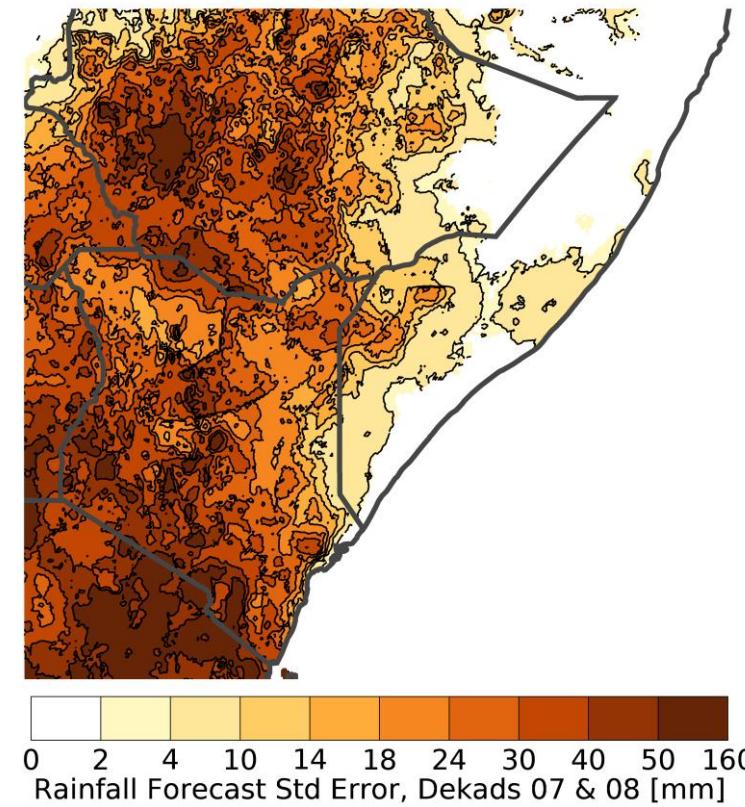
March 1-20 rainfall

Forecast Standard Error Estimate [mm]

Screened based on mean rainfall



Feb 21-28 rainfall

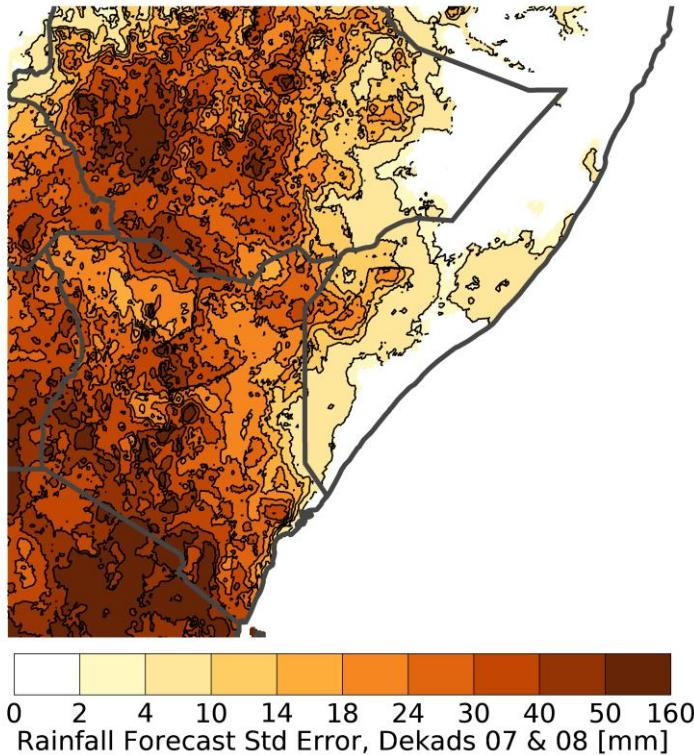


March 1-20 rainfall

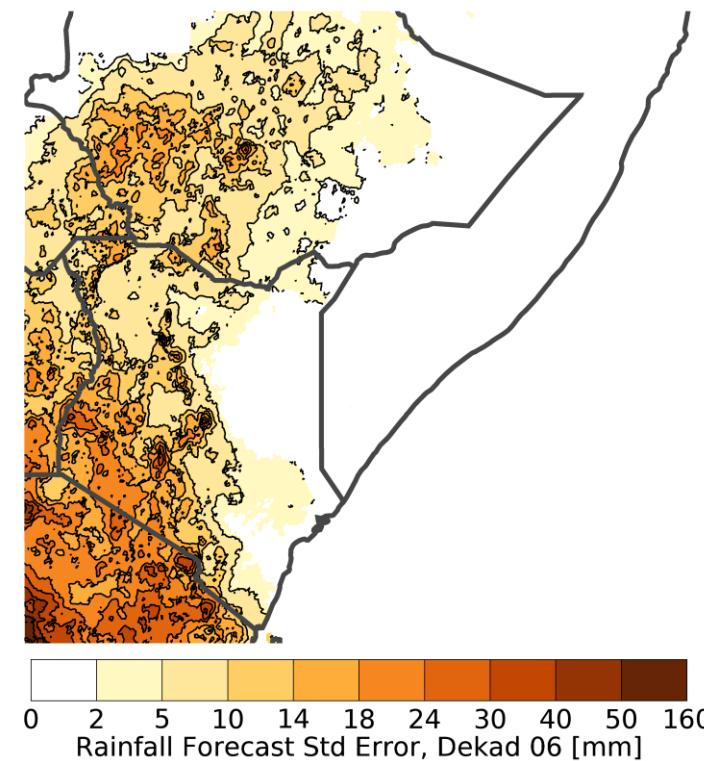
Analysis based on Feb 20th ECMWF forecasts

Rainfall Standard Errors [mm]

Screened based on mean rainfall



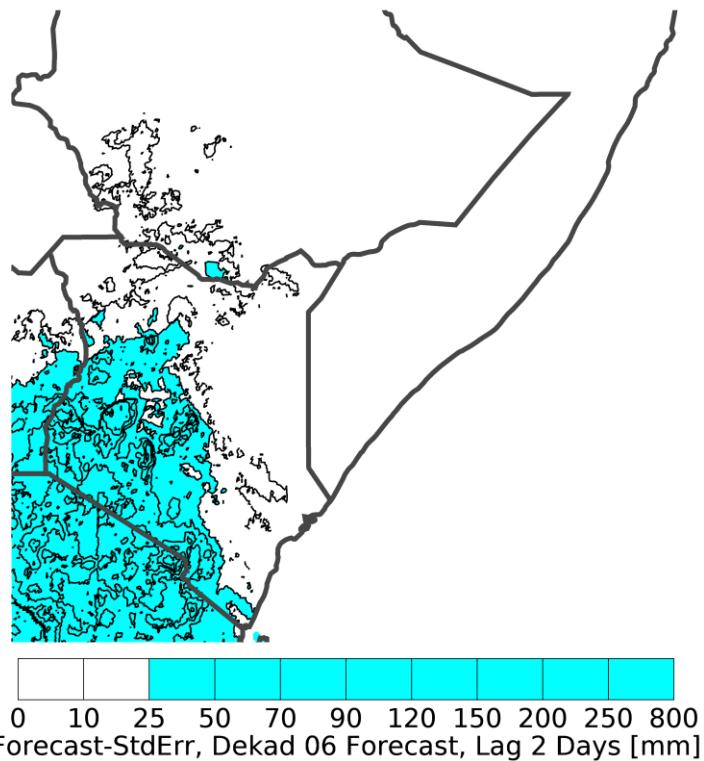
Feb 21-28 rainfall



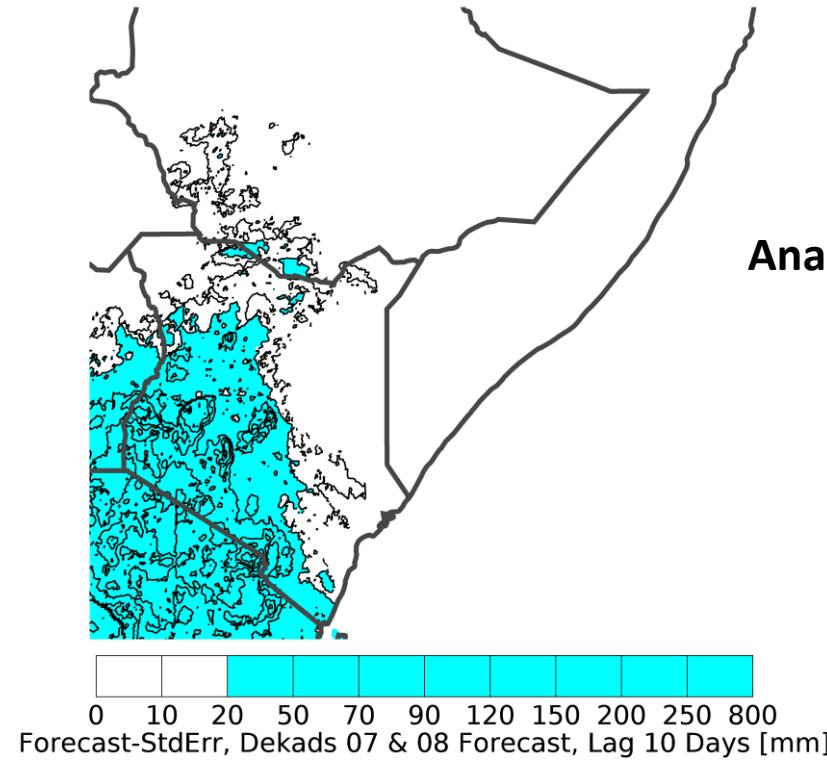
March 1-20 rainfall

Forecast Rainfall, Dekad 6 > 25 mm and Dekads 7+8 > 20 mm

Screened based on mean rainfall



Feb 21-28 rainfall



March 1-20 rainfall

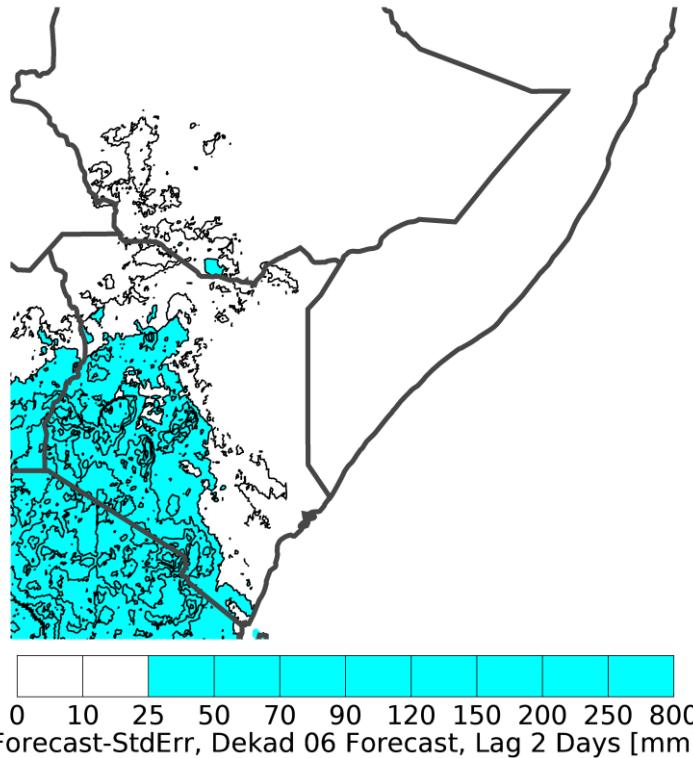
Analysis: Much of Central and Western Kenya will likely see conditions Conducive to Successful Start of Season Conditions

Combining Forecasts and Standard Errors

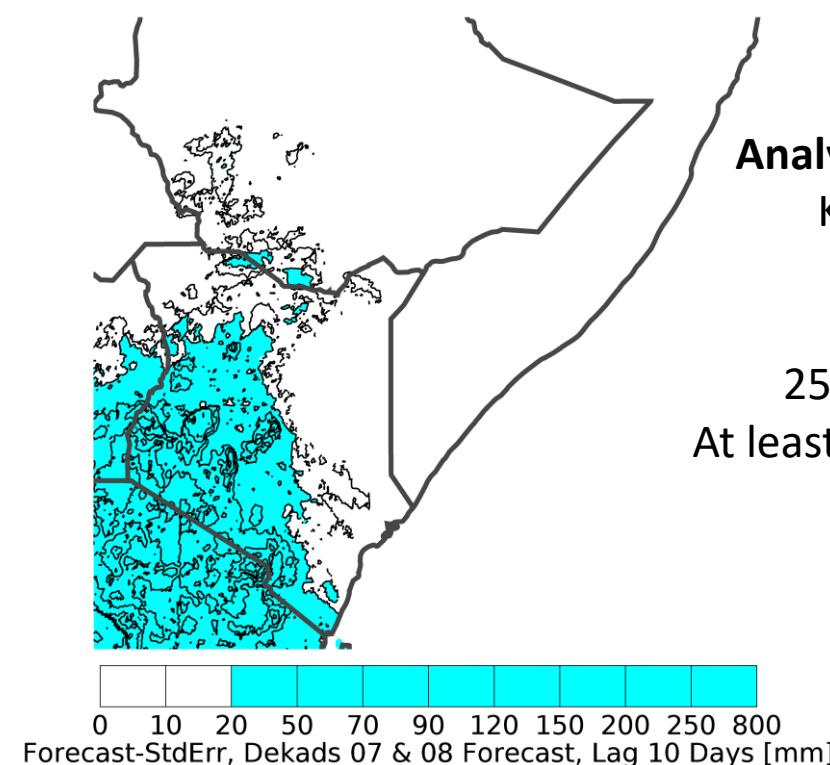
- Rainfall forecast – 1 standard error seems a good lower bound for the forecast
- There should be about an 84% chance of getting at least this much rainfall, assuming errors follow a normal distribution

Forecast Rainfall-Std Error , Dekad 6 > 25 mm and Dekads 7+8 > 20 mm

Screened based on mean rainfall



Feb 21-28 rainfall



March 1-20 rainfall

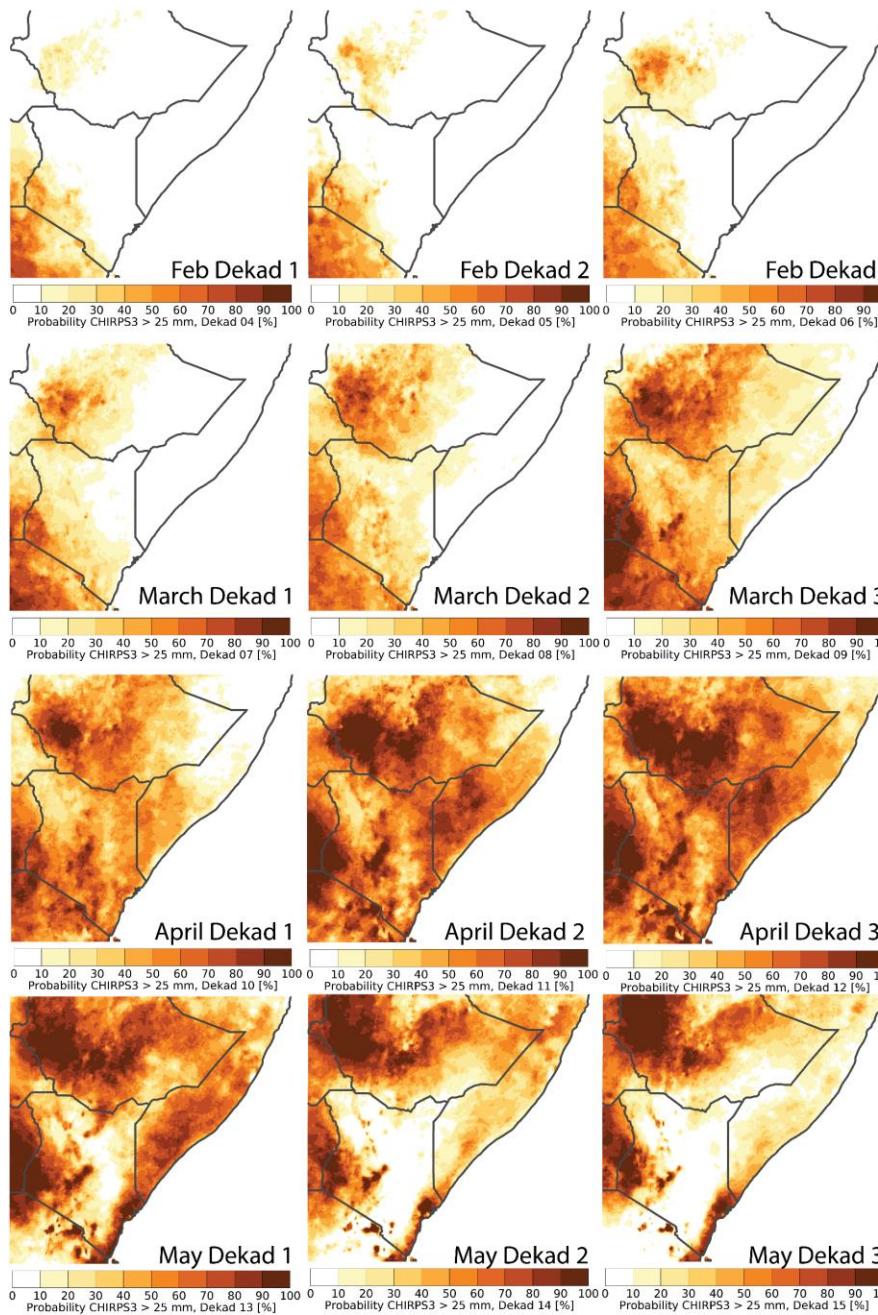
Analysis: Much of Central and Western Kenya will likely see conditions conducive to Successful Start of Season Conditions = 25 mm or more in Late February + At least 20 mm on the 1st 20 days of March

Conclusions?

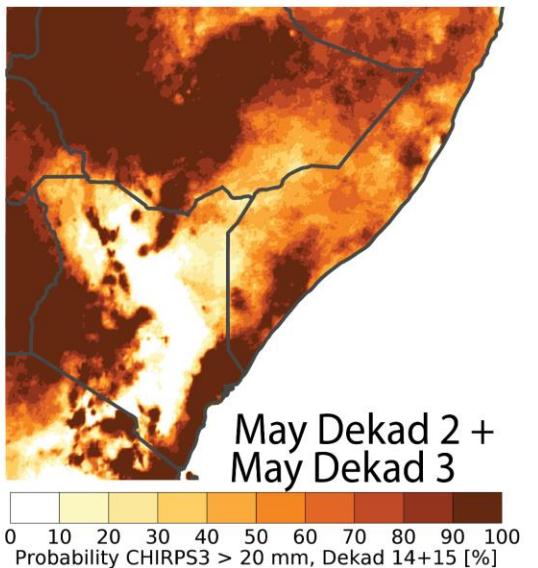
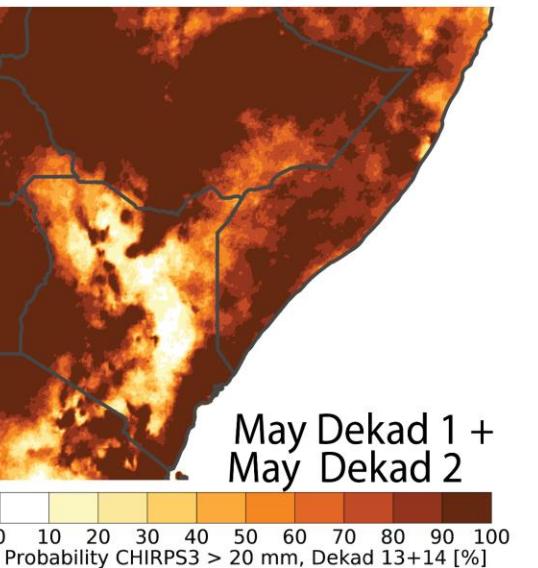
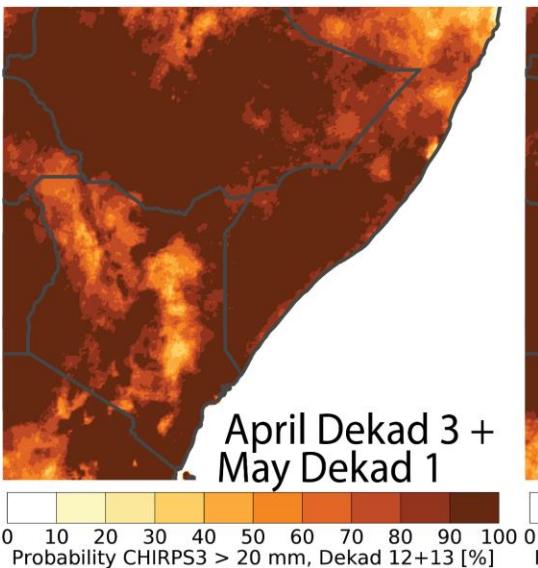
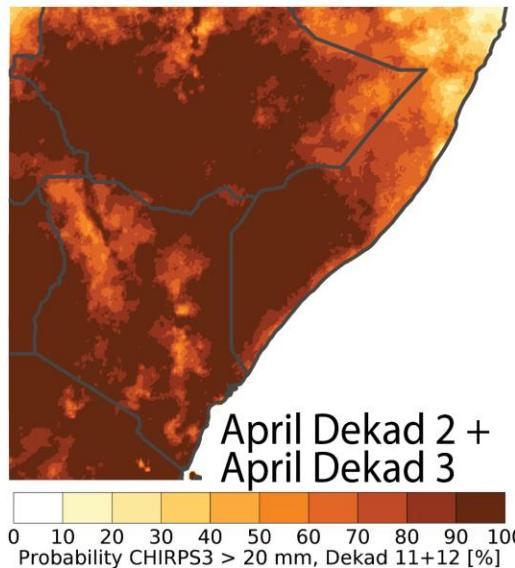
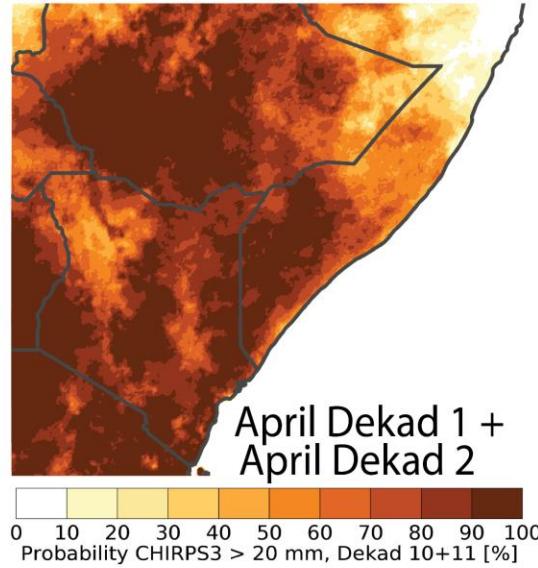
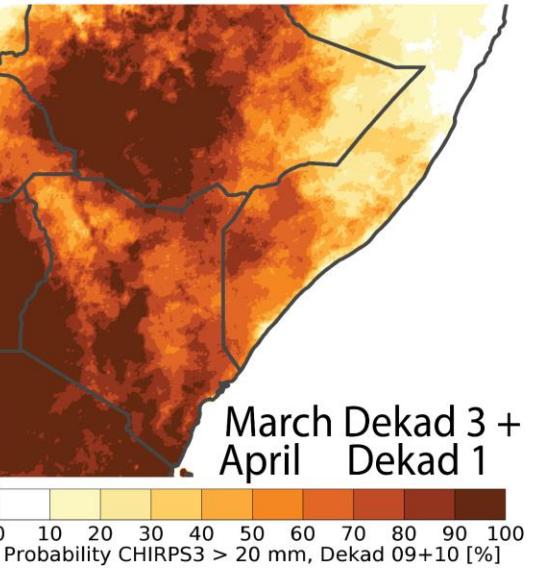
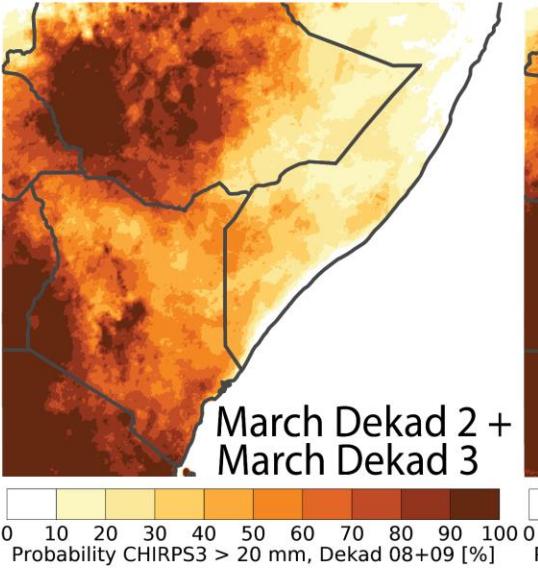
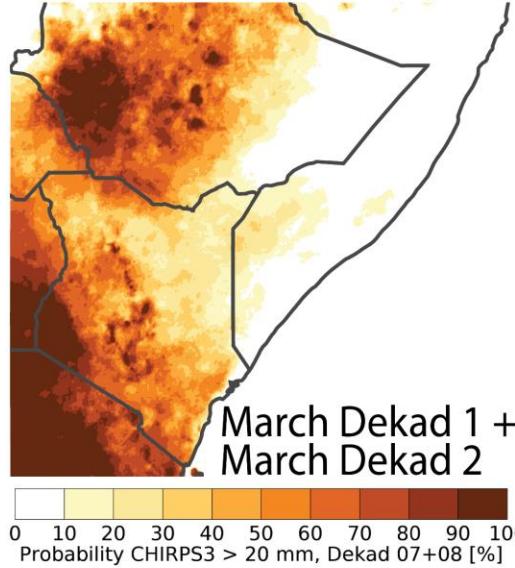
- After a very poor 2025 short rains, central and western Kenya looks very likely to see an early start of the 2026 long rains season
- ECMWF, GEFS and the SubC forecast systems all seem to converge on a similar, positive story
- Analysis of historic CHIRPS data suggests that **IF** healthy rains come in late February, **THEN** it is quite likely that enough rain will come in early March to satisfy a 20 mm in 20 days criterion
- Analysis of ECMWF forecasts and standard error estimates suggest that much of central-western Kenya will get rainfall more than 25 mm in late February and then get more than 20 mm of rainfall in the first 20 days of March.

Background Analyses of 2005-2025 CHIRPS data

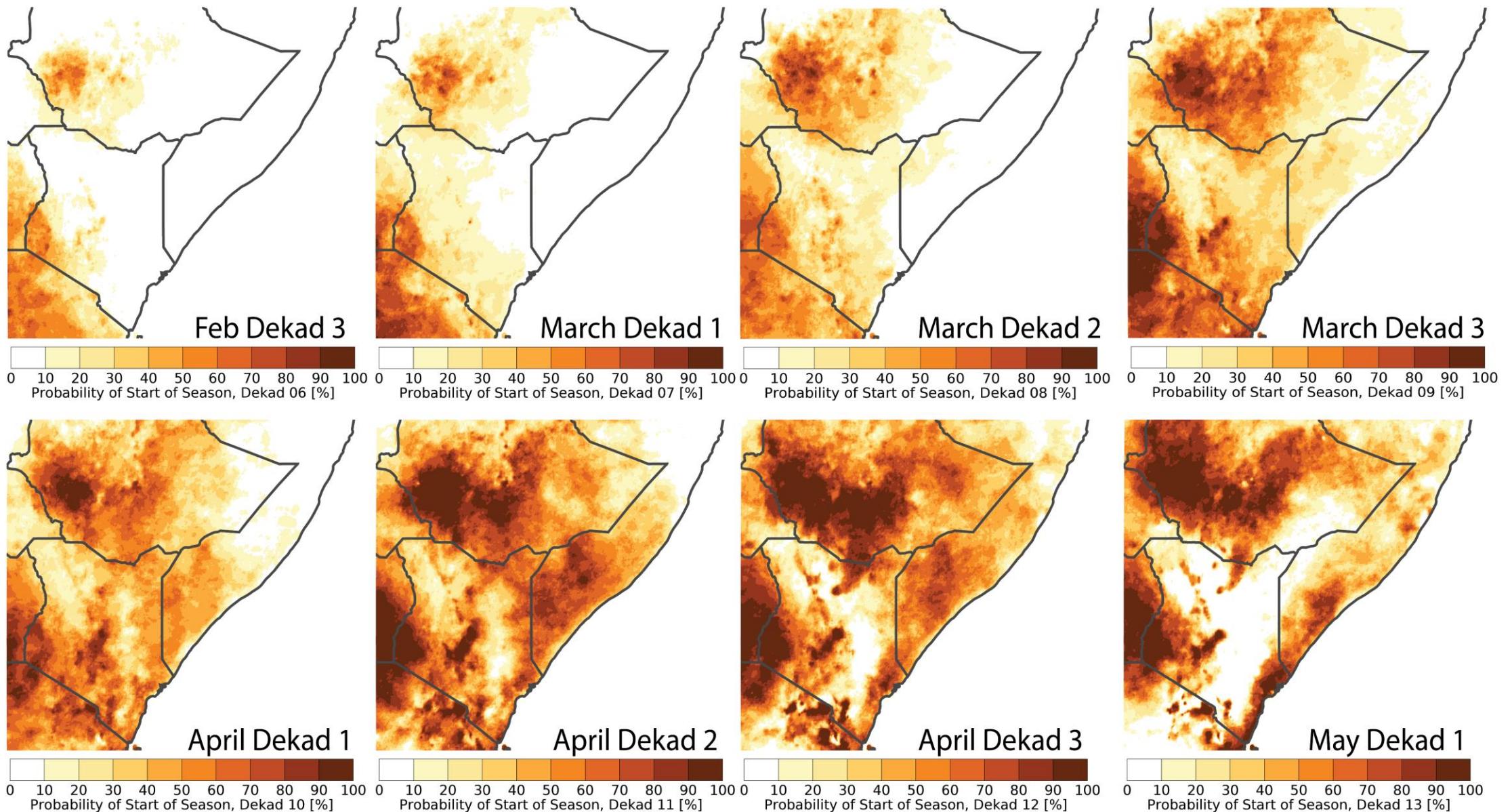
Historical (2005-2025) chance of Wet Dekads (>25 mm)



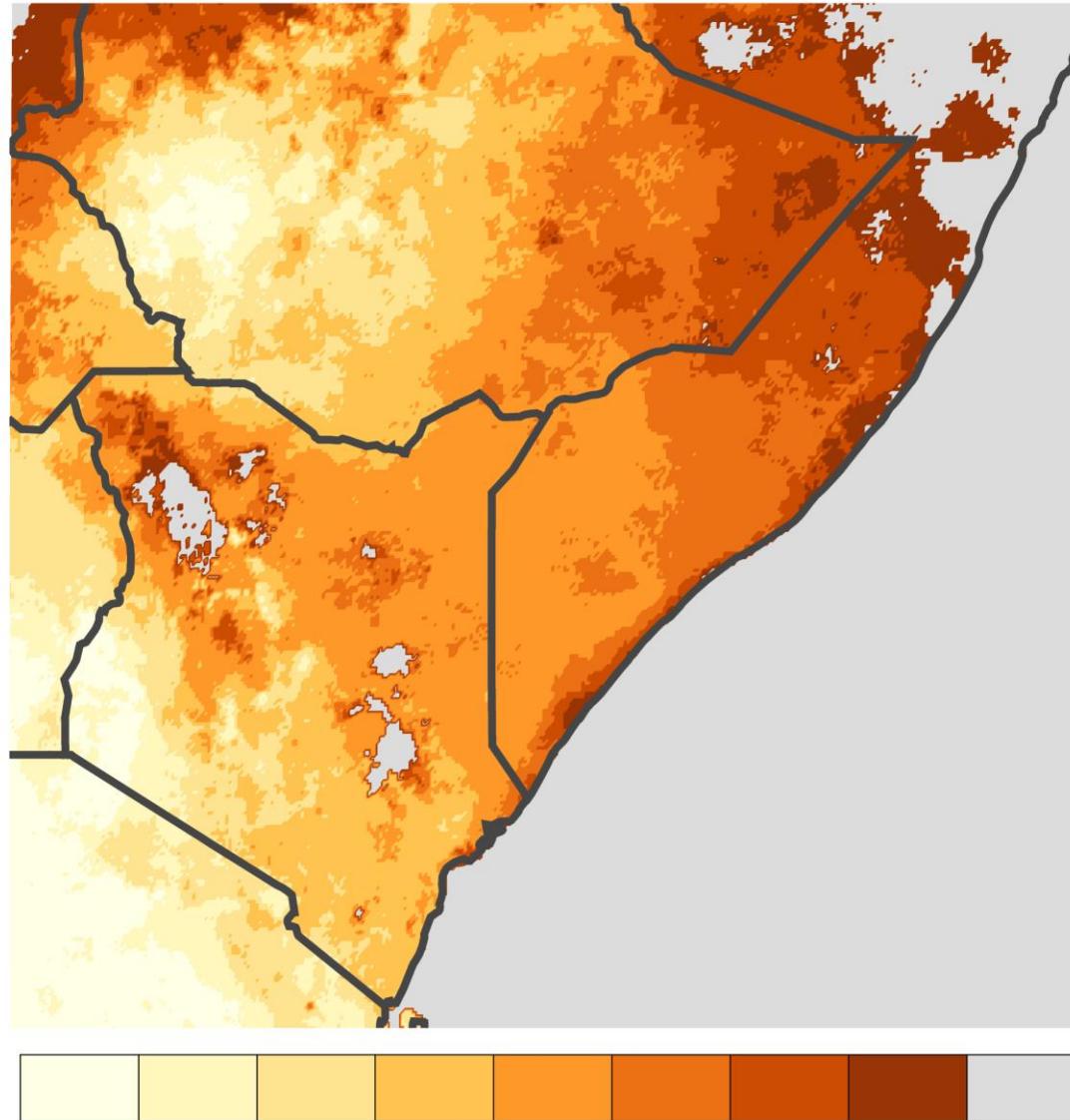
Historical (2005-2025) chance of 2 OK Dekads (>20 mm)



Historical (2005-2025) chance of Start of Season

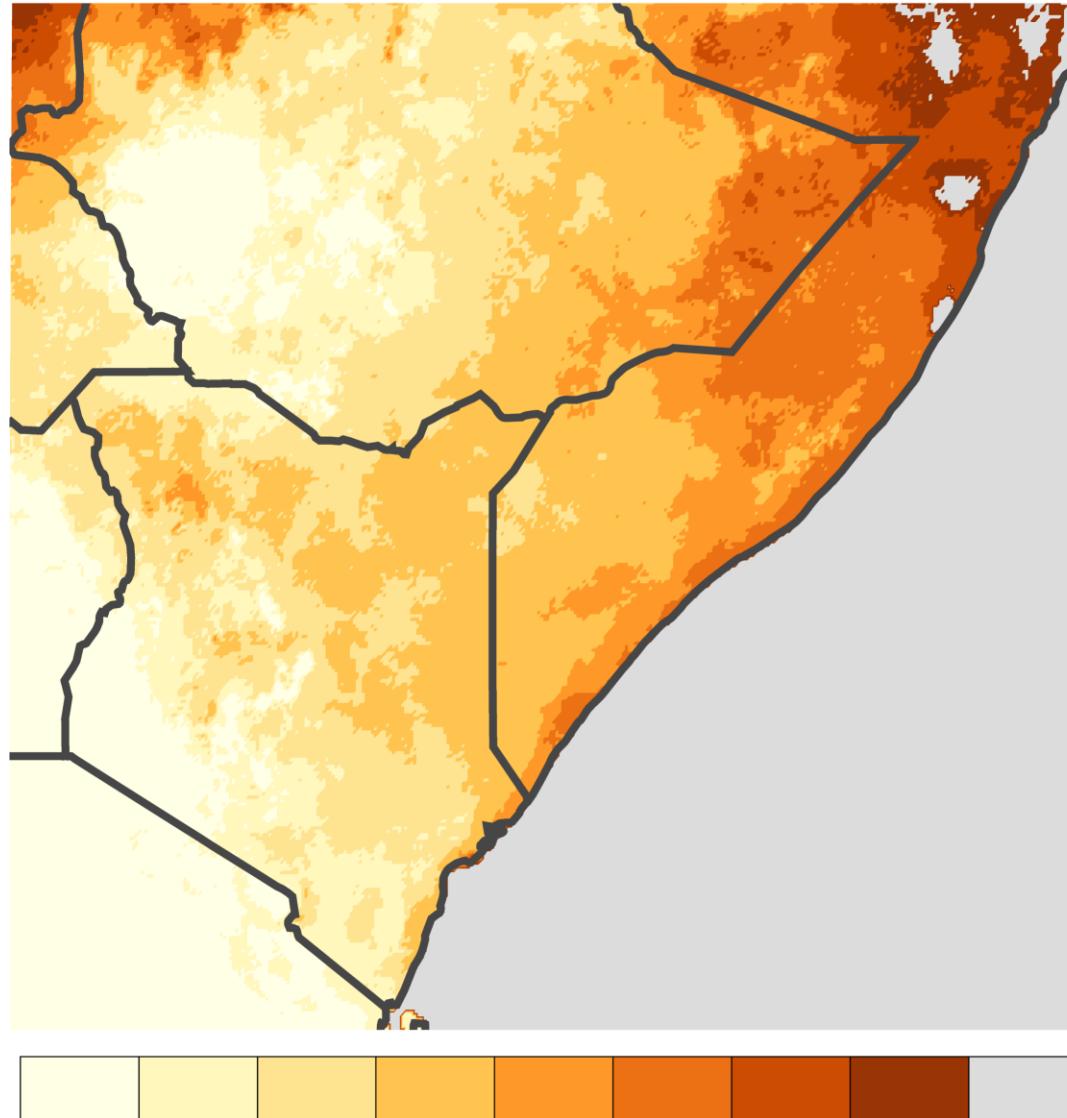


Historical Start of Season Median (dekads)



6 7 8 9 10 11 12 13 Fail
Dekad

Historical Start of Season 20th Percentile (dekads)



6 7 8 9 10 11 12 13 Fail
Dekad

Historical Start of Season 80th Percentile (dekads)

