

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

2/22/2026



Kenya  
Meteorological  
Department



Climate  
Hazards  
Center  
UC SANTA BARBARA



Karlsruher Institut für Technologie





**Climate Hazards Center**  
UC SANTA BARBARA

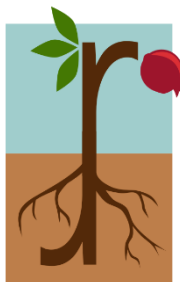
- CHIRPS3
- SubC Forecasts
- System Integration

**UCAR**

(3D PAWS, IBF)




(Dynamic Forecasting)



**rhiza**  
research

(Onsets AI Forecasting)



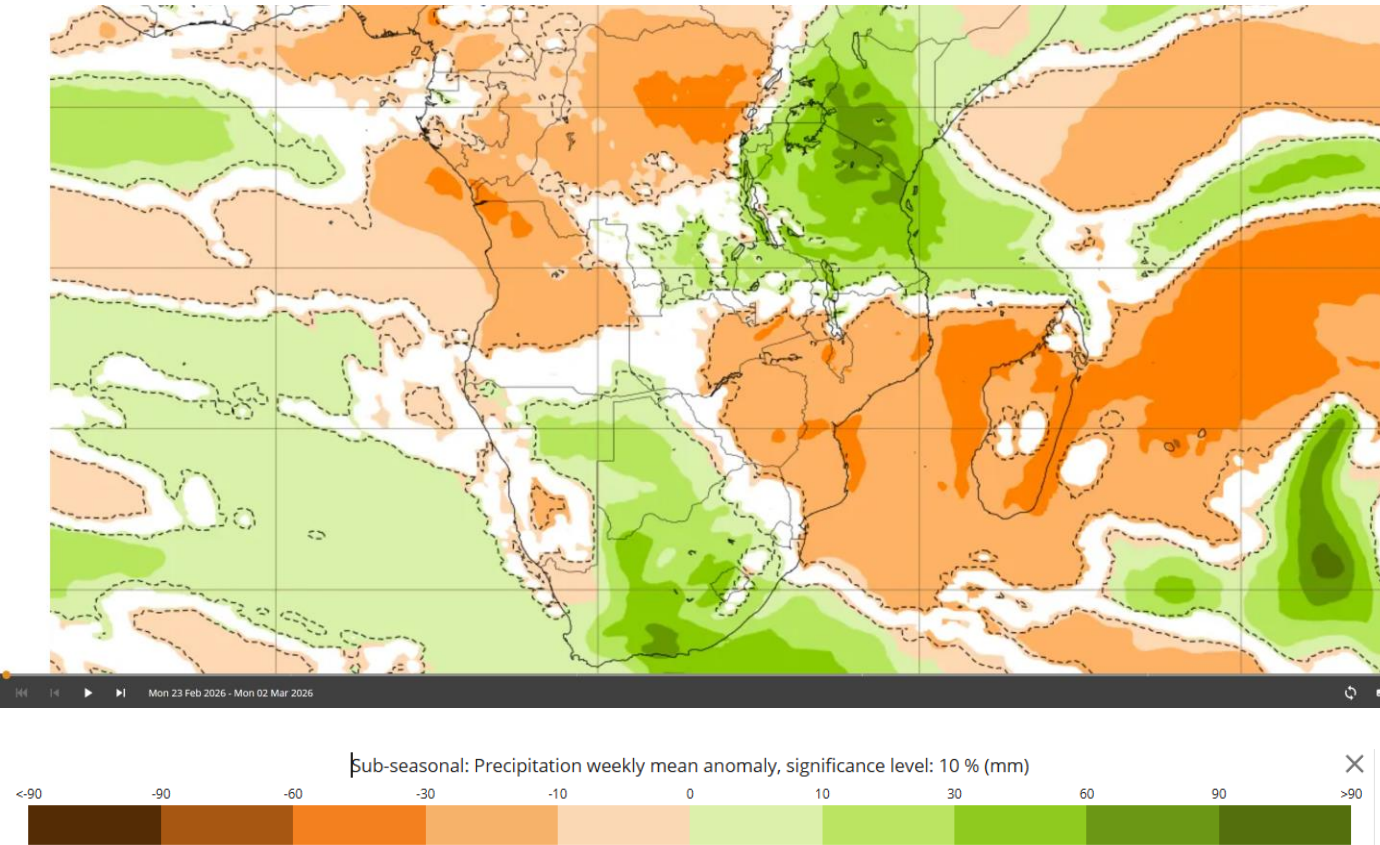
MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY  
**KENYA METEOROLOGICAL DEPARTMENT**  
REPUBLIC OF KENYA

Improved Monthly and Sub-Seasonal Forecasts

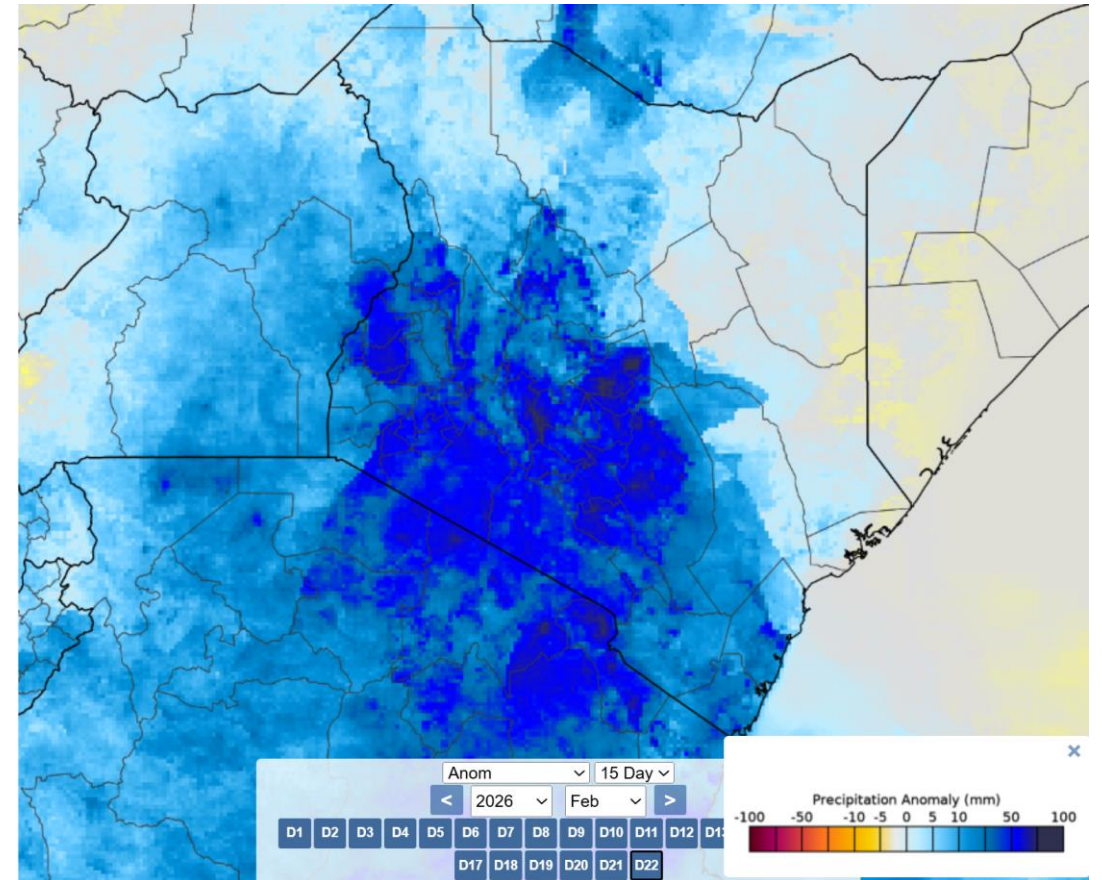
Improved Agricultural Advisories

Improved Flood Alerts

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

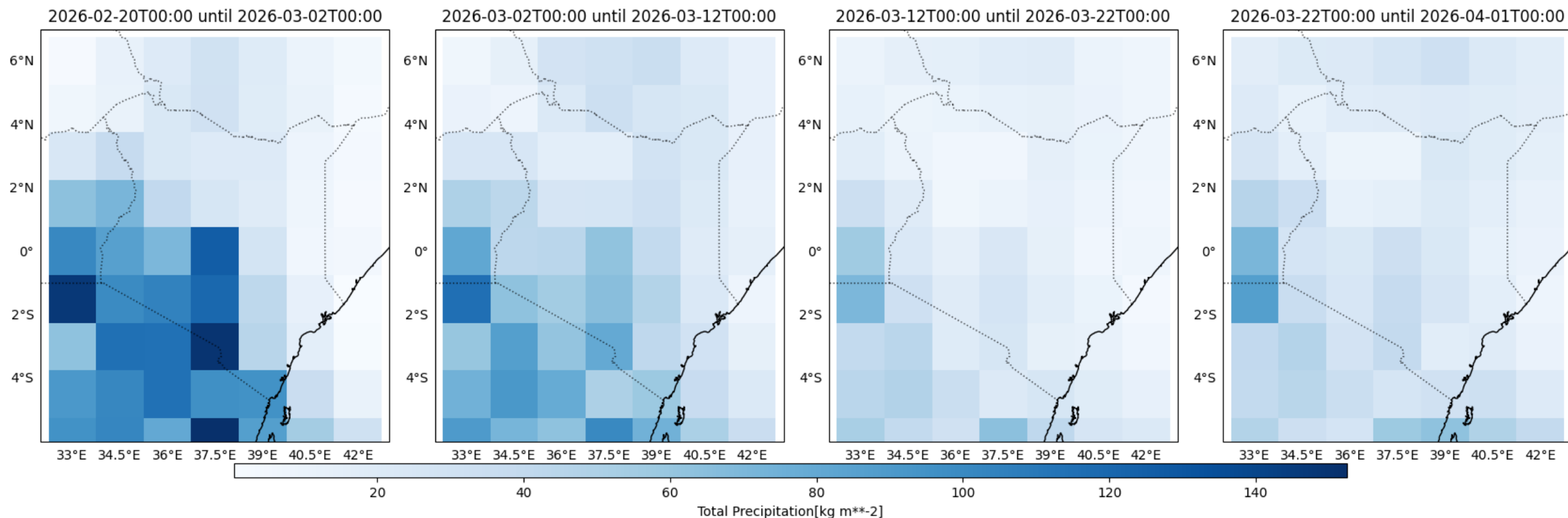


Feb 23 to March 2<sup>nd</sup> ECMWF sub-seasonal rainfall  
Forecasts anomalies  
Accessed February 22<sup>nd</sup>

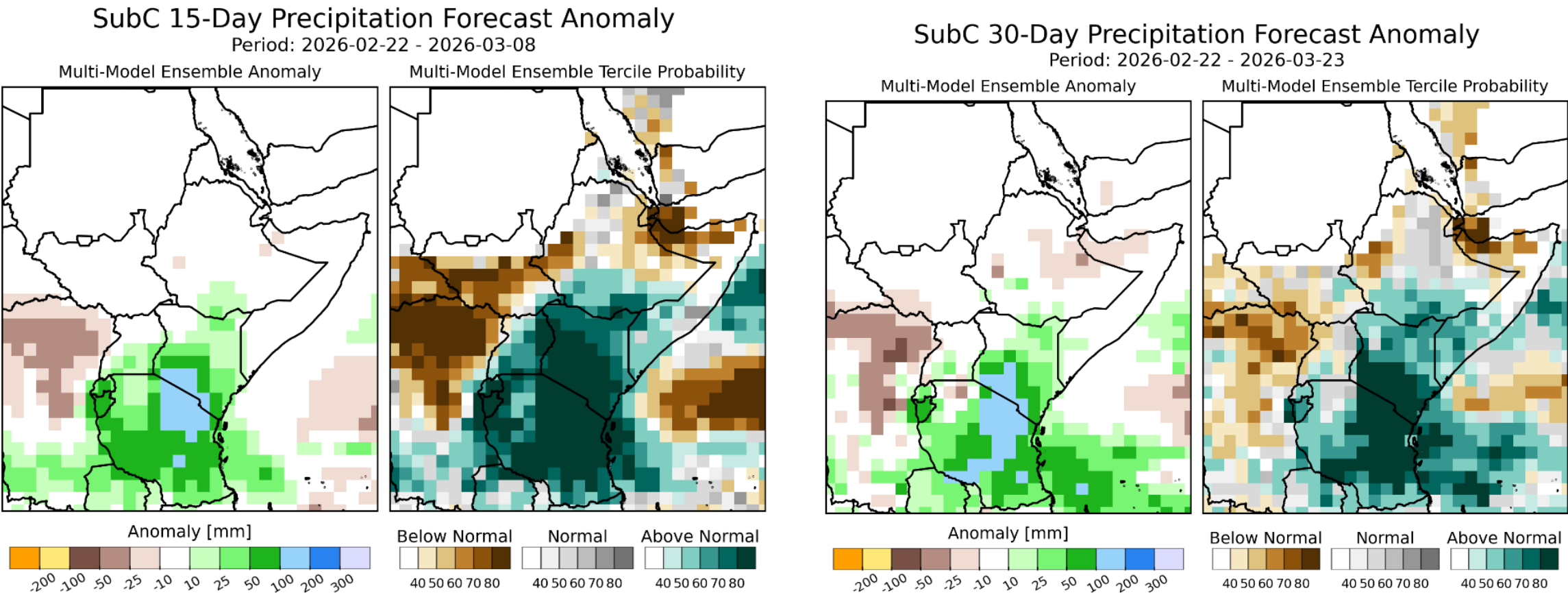


Feb 23 to March 2<sup>nd</sup> CHIRPS-GEFS 15 day rainfall  
Forecast anomalies  
Accessed February 22<sup>nd</sup>

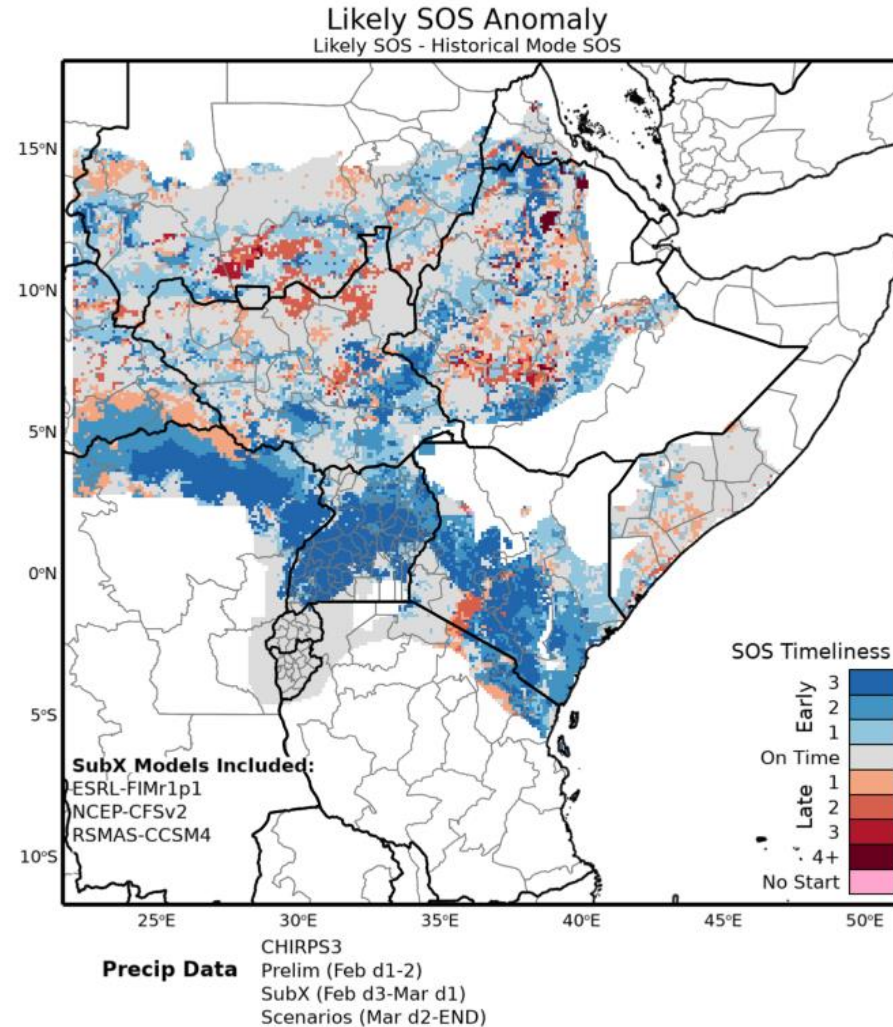
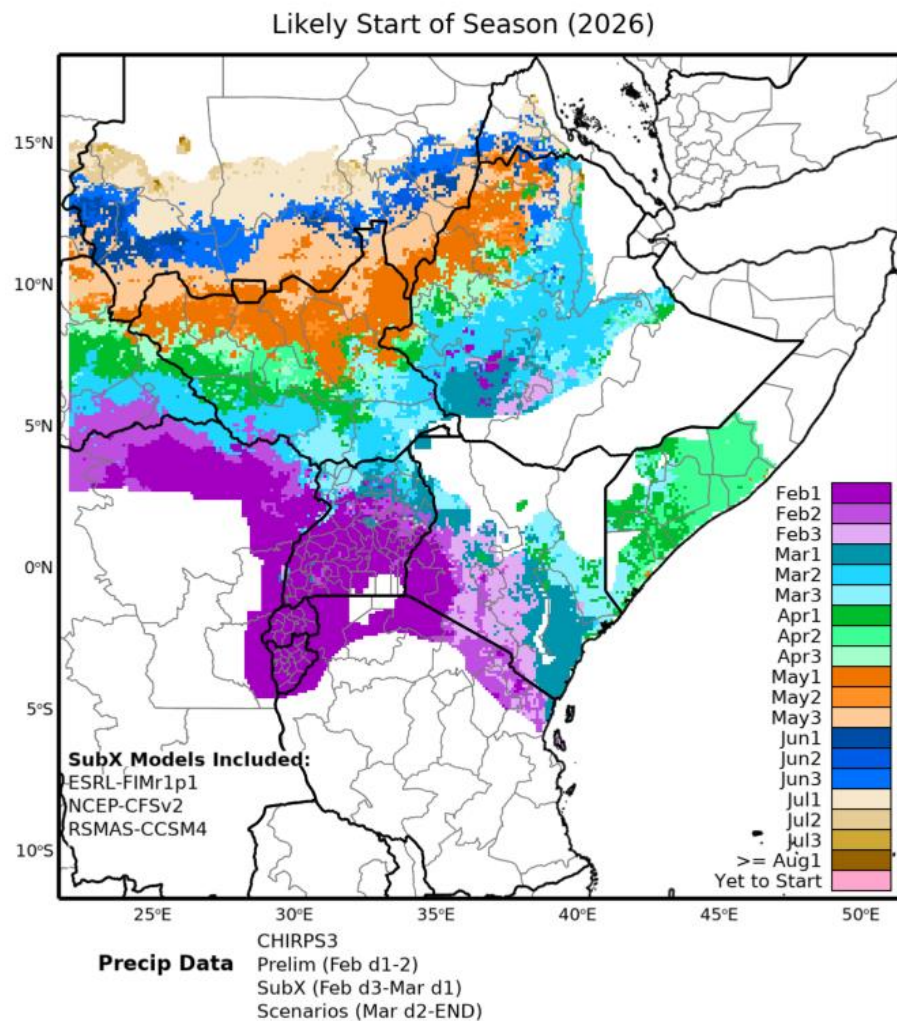
# ECMWF Forecast from KIT/KMD Collaboration



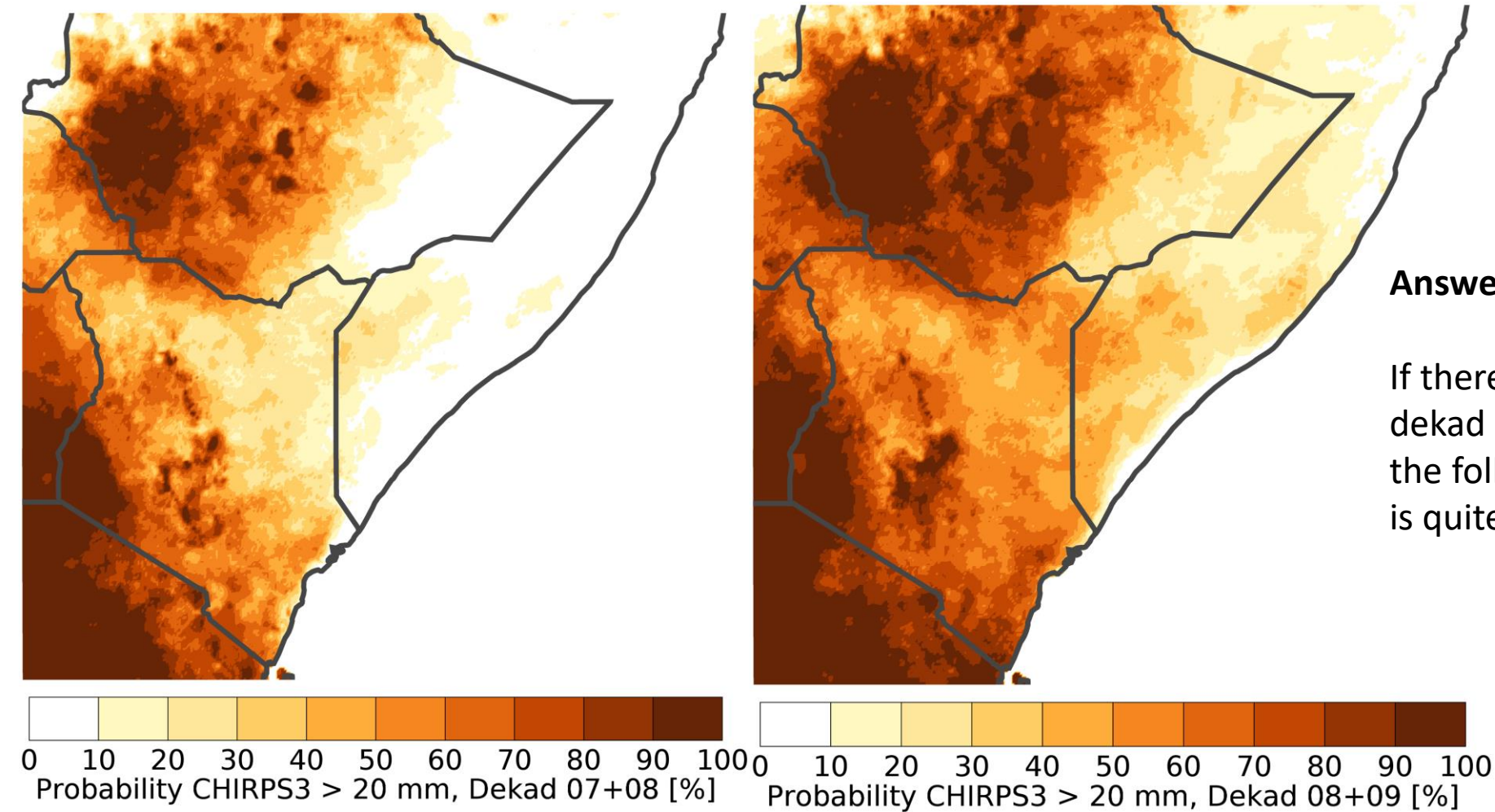
# CHC SubC Forecast Ensemble



# CHC SubC likely Start of Season



Question: **IF** the last dekad of February or 1<sup>st</sup> 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

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

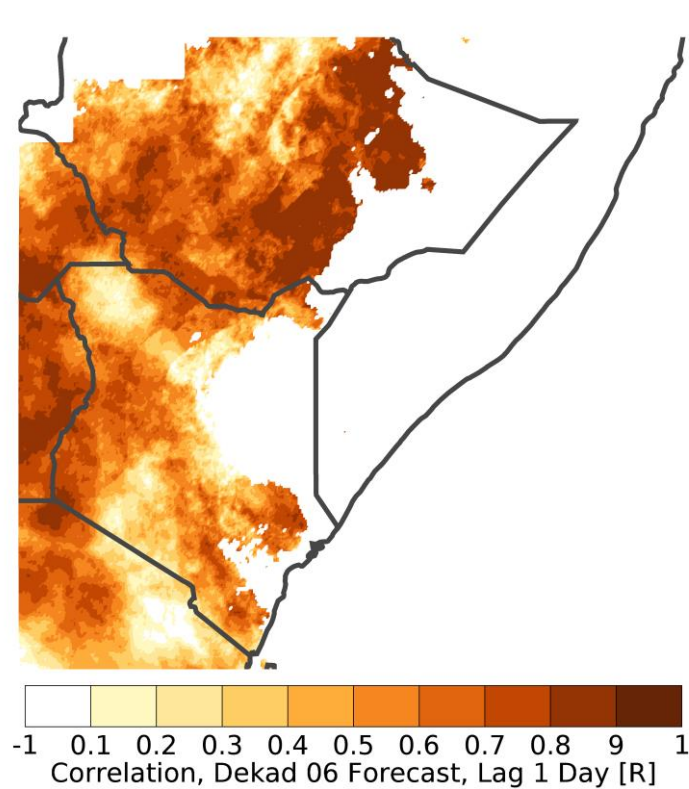
'Start of Season' is defined here as a dekad with >25 mm of rain, followed by 2 dekads receiving at least 20 mm of rain

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

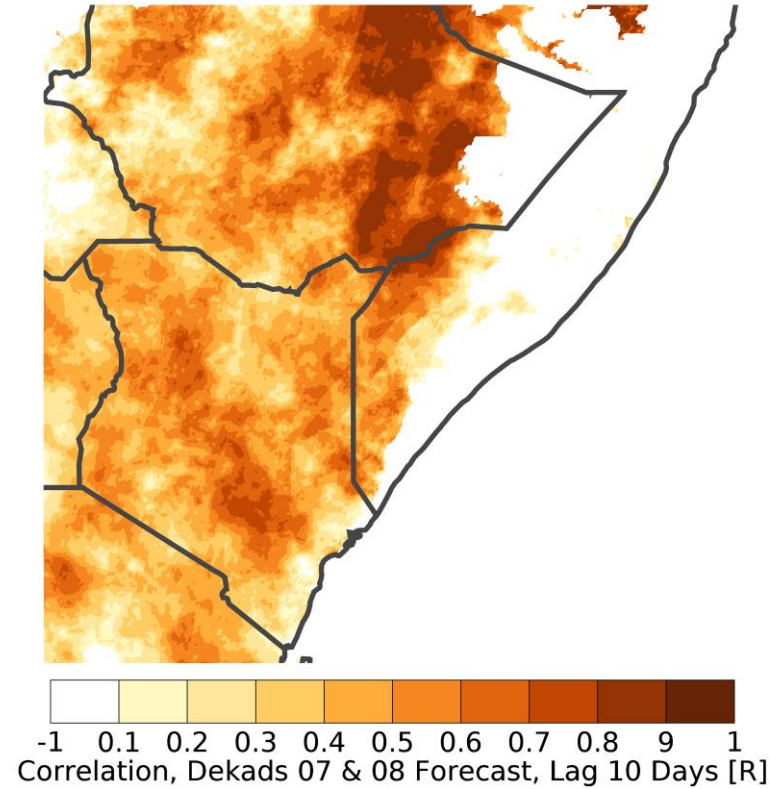


# Correlation Maps – ECMWF and CHIRPS

Screened based on mean rainfall



Feb 21-28 rainfall

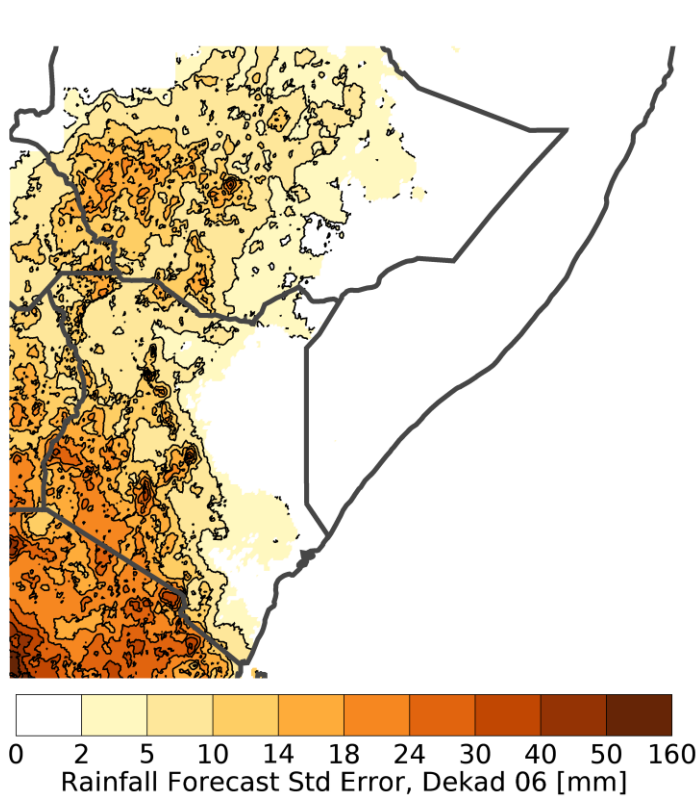


March 1-20 rainfall

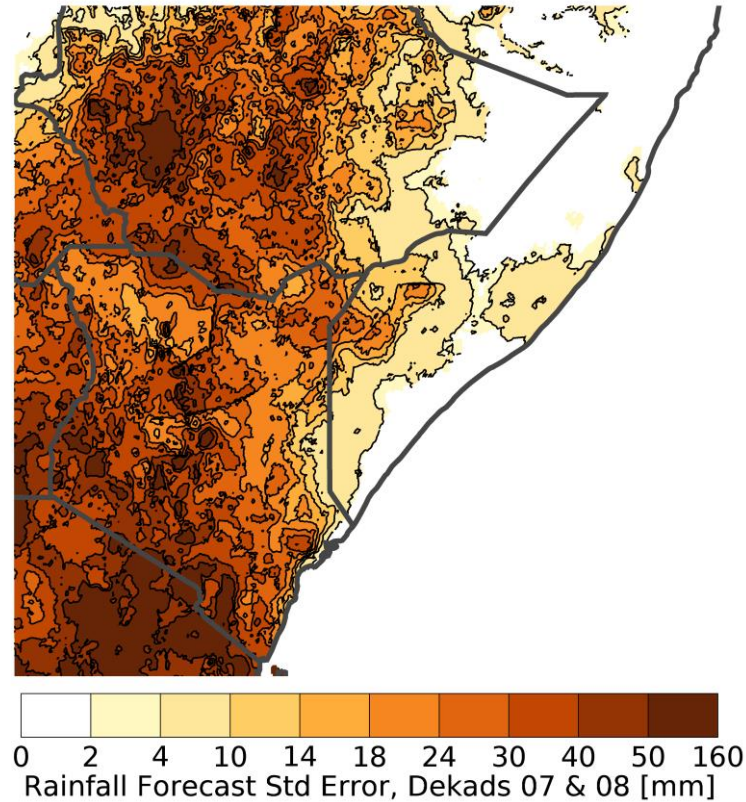
Analysis based on Feb 20<sup>th</sup> ECMWF forecasts

# Forecast Standard Error Estimate [mm]

Screened based on mean rainfall



Feb 21-28 rainfall

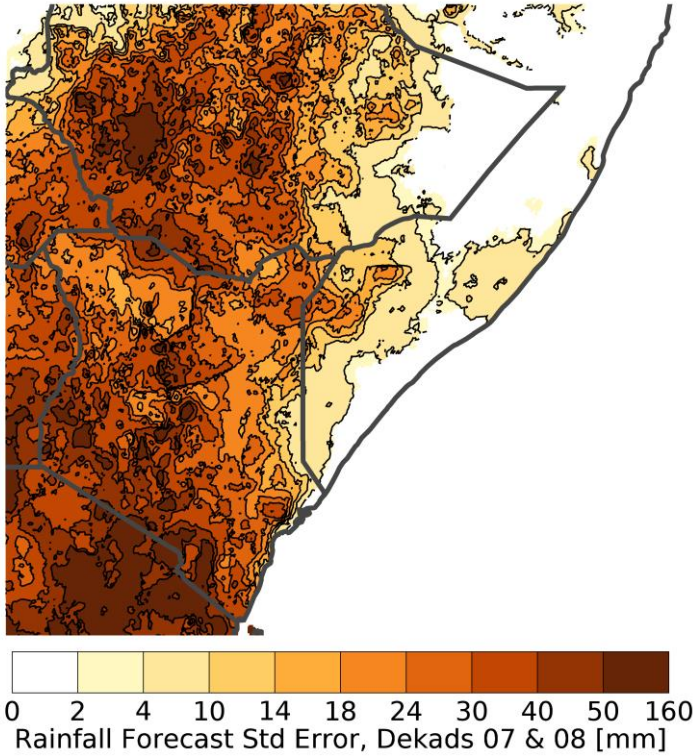


March 1-20 rainfall

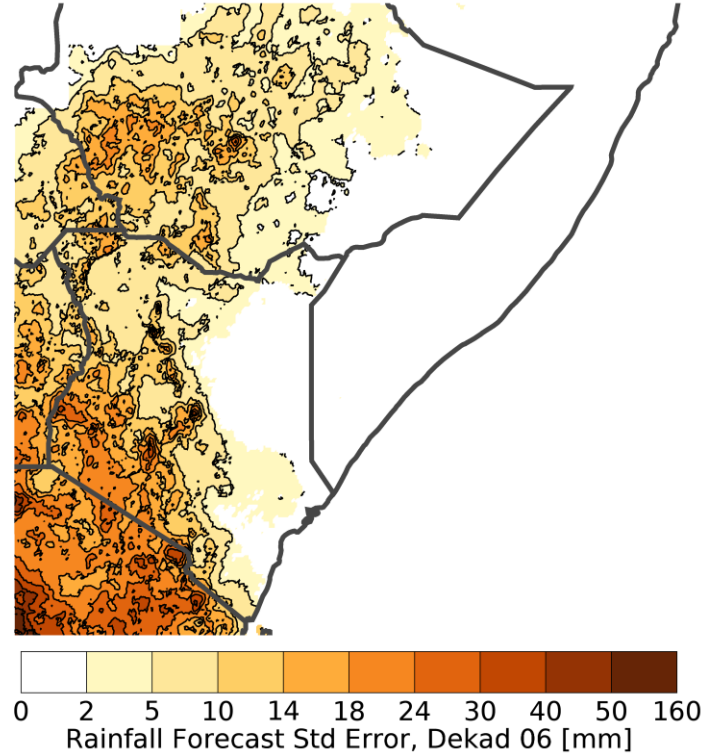
Analysis based on Feb 20<sup>th</sup> ECMWF forecasts

# Rainfall Standard Errors [mm]

Screened based on mean rainfall



Feb 21-28 rainfall

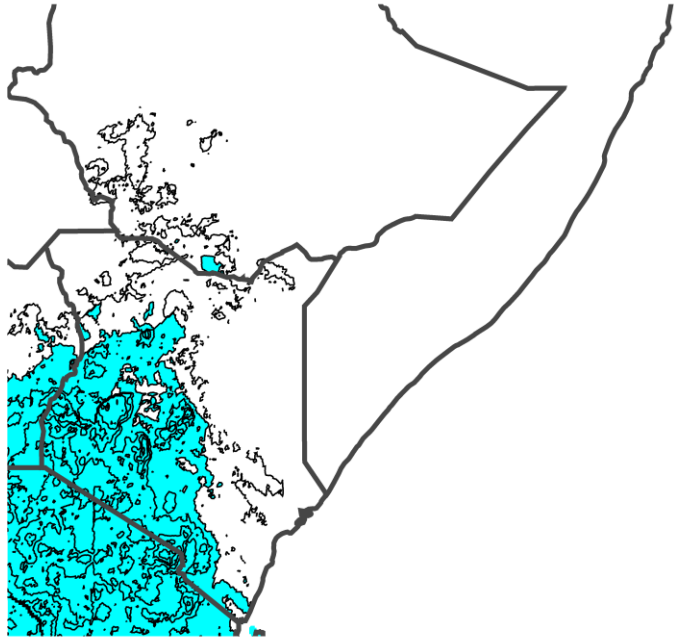


March 1-20 rainfall

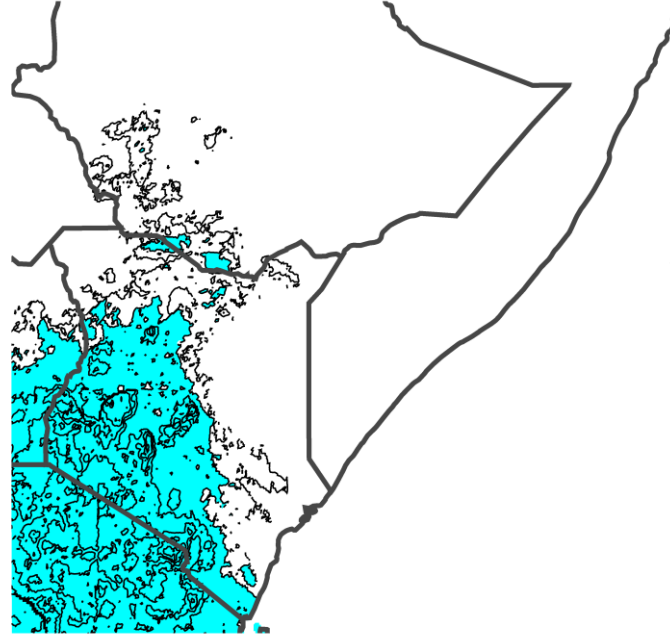
Analysis based on Feb 20<sup>th</sup> ECMWF forecasts

# 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

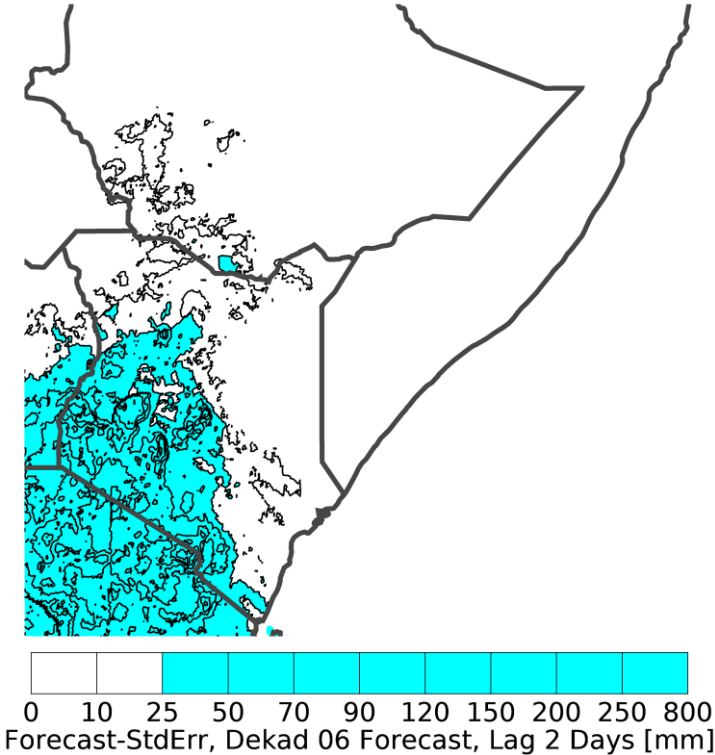
Analysis based on Feb 20<sup>th</sup> ECMWF forecasts

# Combining Forecasts and Standard Errors

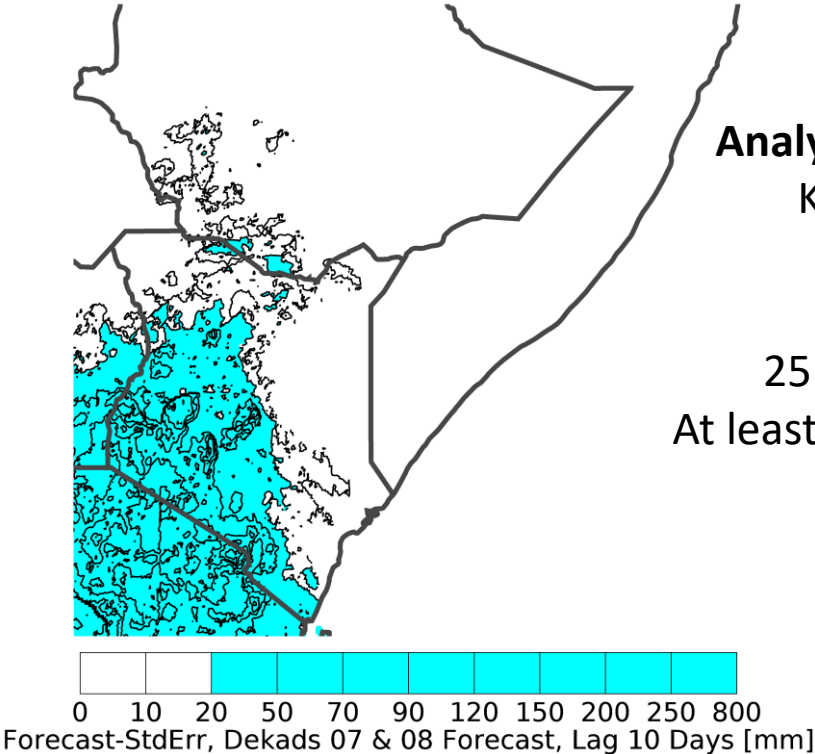
- Rainfall forecast – 1 standard error seems a good lower bound for the forecast
- There should be about an 84% chance of getting at least this much rainfall, assuming errors follow a normal distribution

# 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

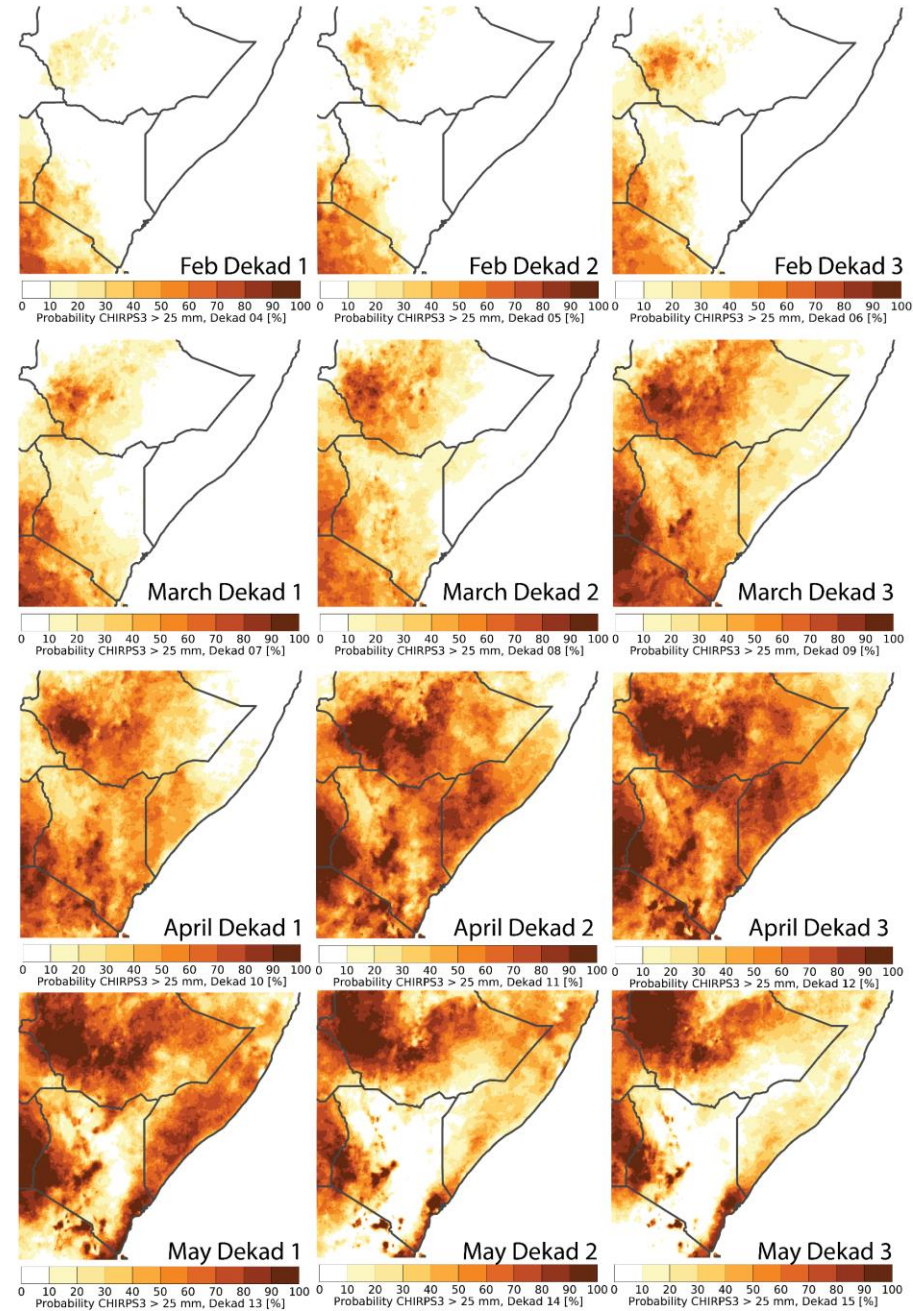
**Analysis:** Much of Central and Western Kenya will likely see conditions Conducive to Successful Start of Season Conditions = 25 mm or more in Late February + At least 20 mm on the 1<sup>st</sup> 20 days of March

# Conclusions?

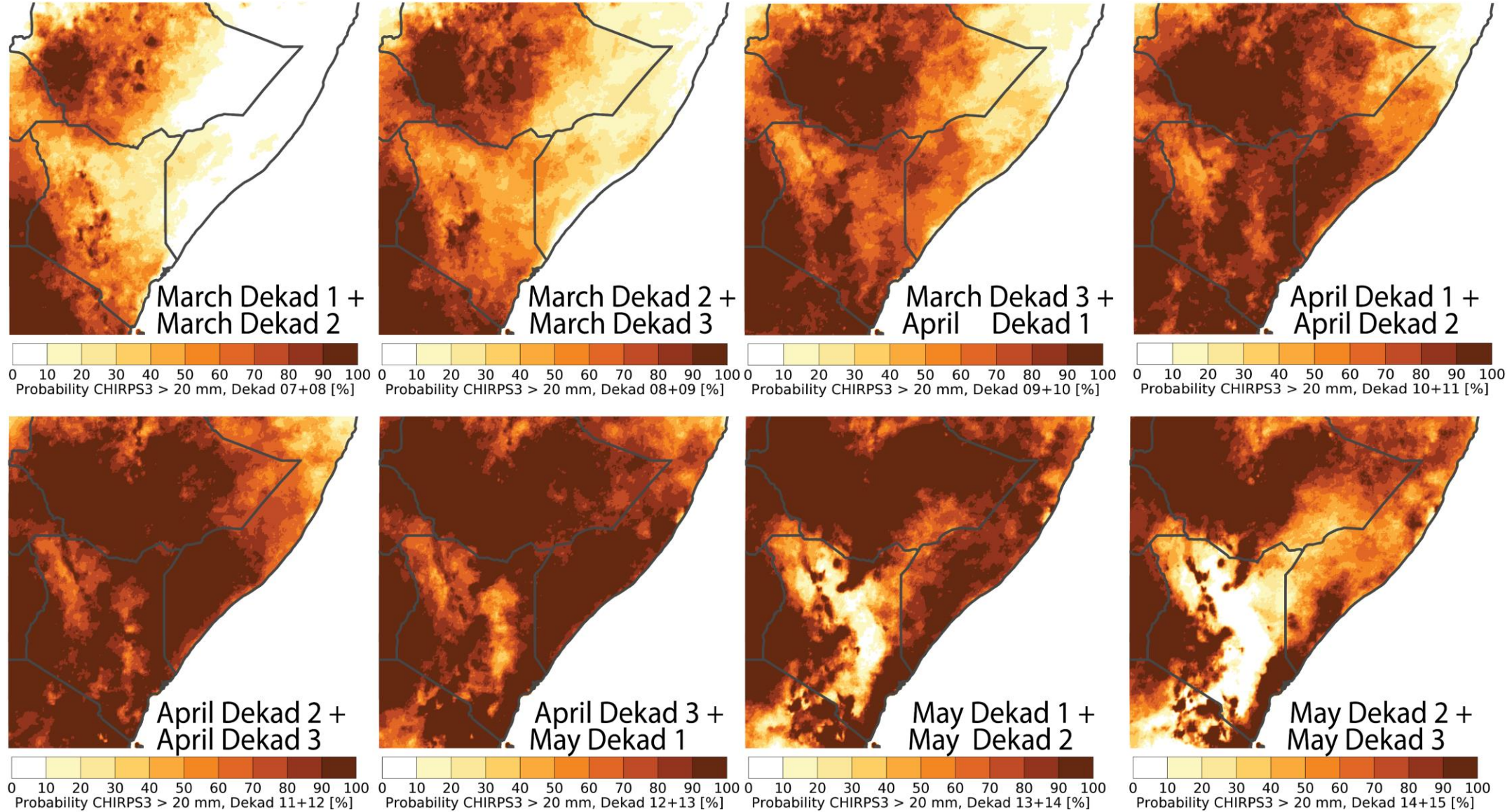
- After a very poor 2025 short rains, central and western Kenya looks very likely to see an early start of the 2026 long rains season
- ECMWF, GEFS and the SubC forecast systems all seem to converge on a similar, positive story
- Analysis of historic CHIRPS data suggests that **IF** healthy rains come 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

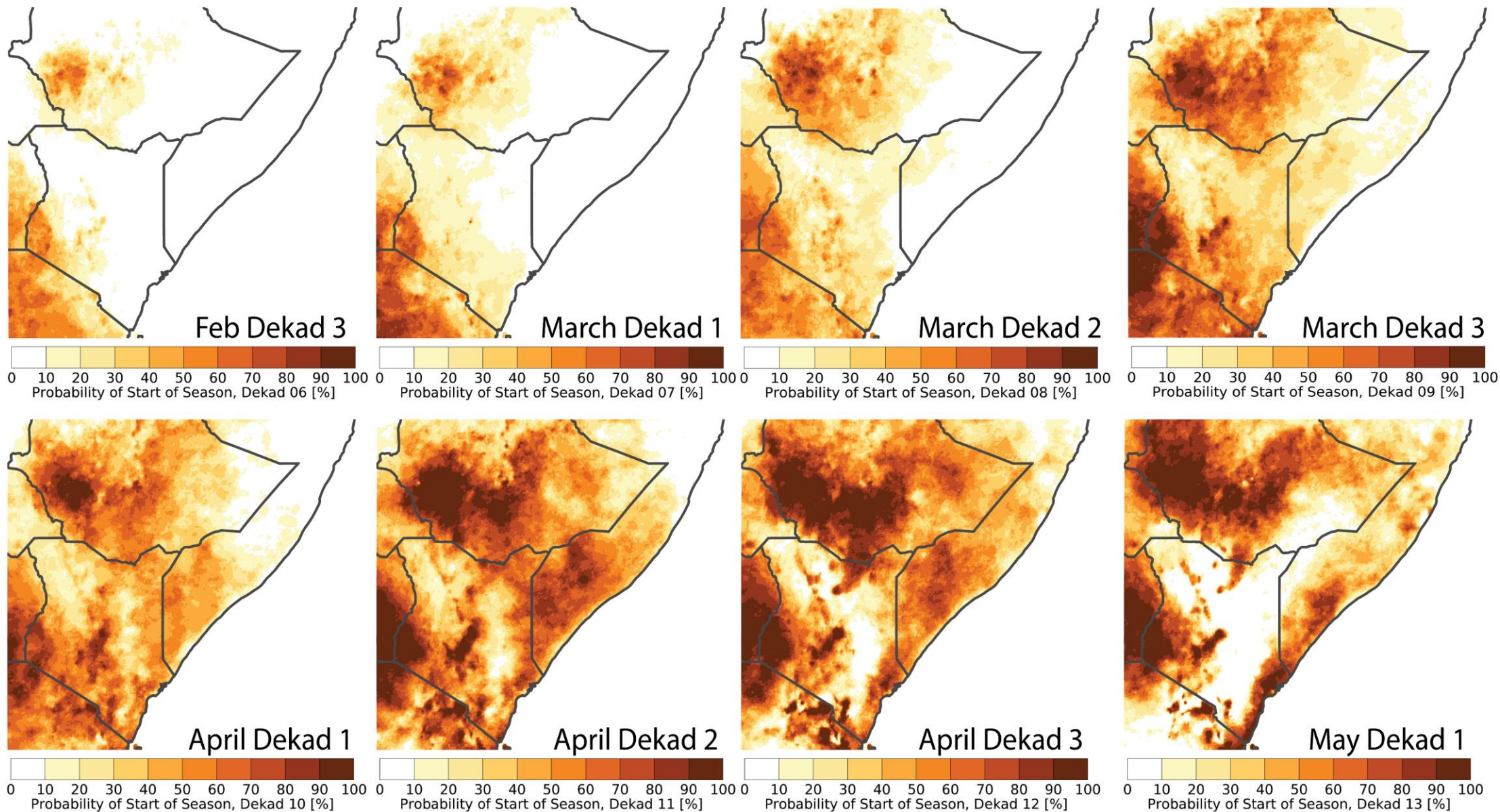
# Historical (2005-2025) chance of Wet Dekads ( $>25$ mm)



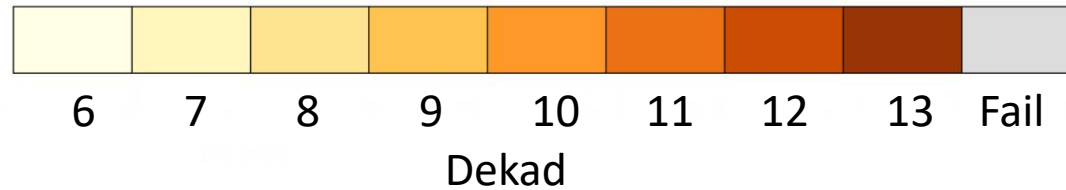
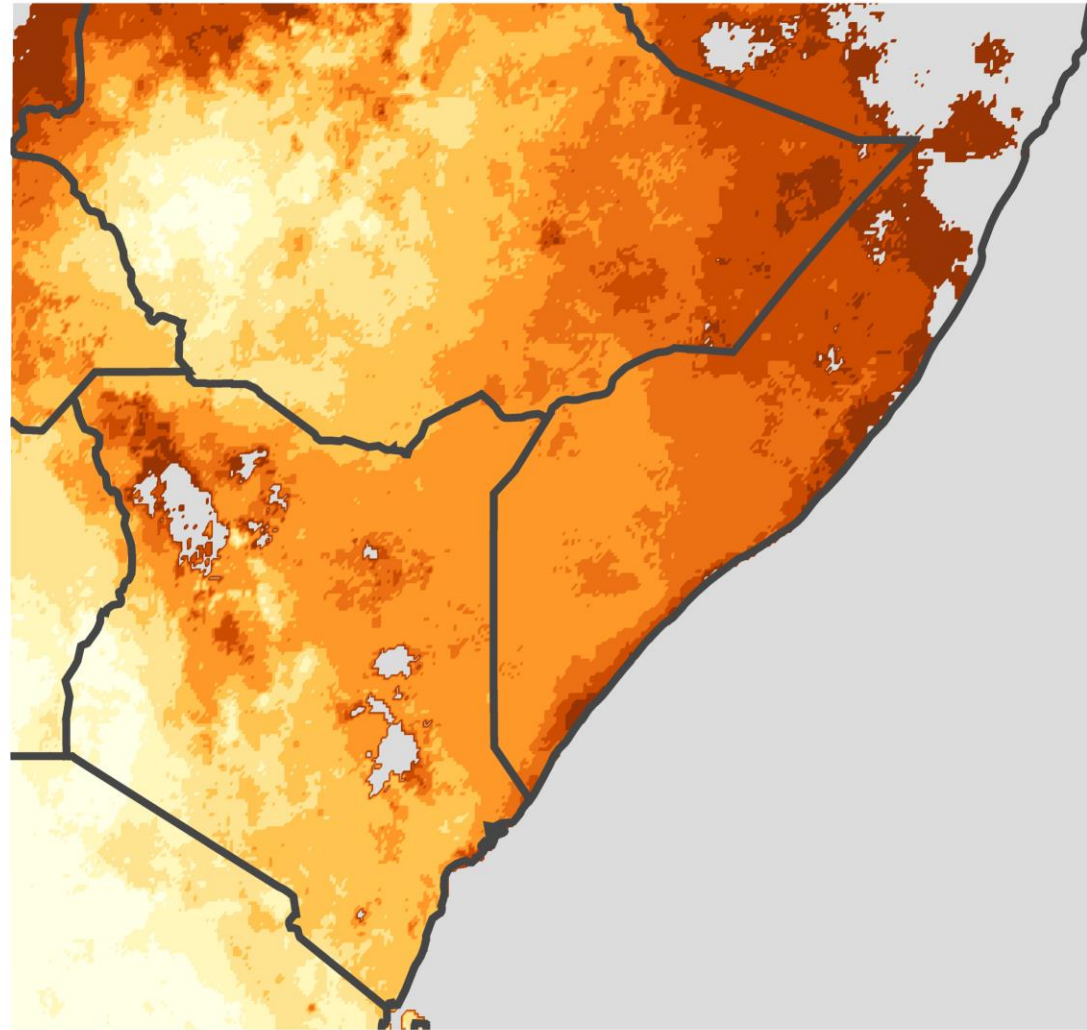
# Historical (2005-2025) chance of 2 OK Dekads (>20 mm)



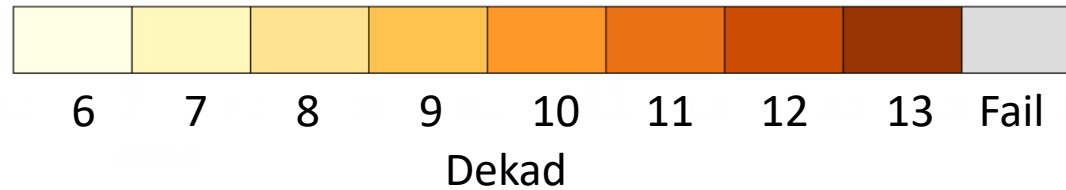
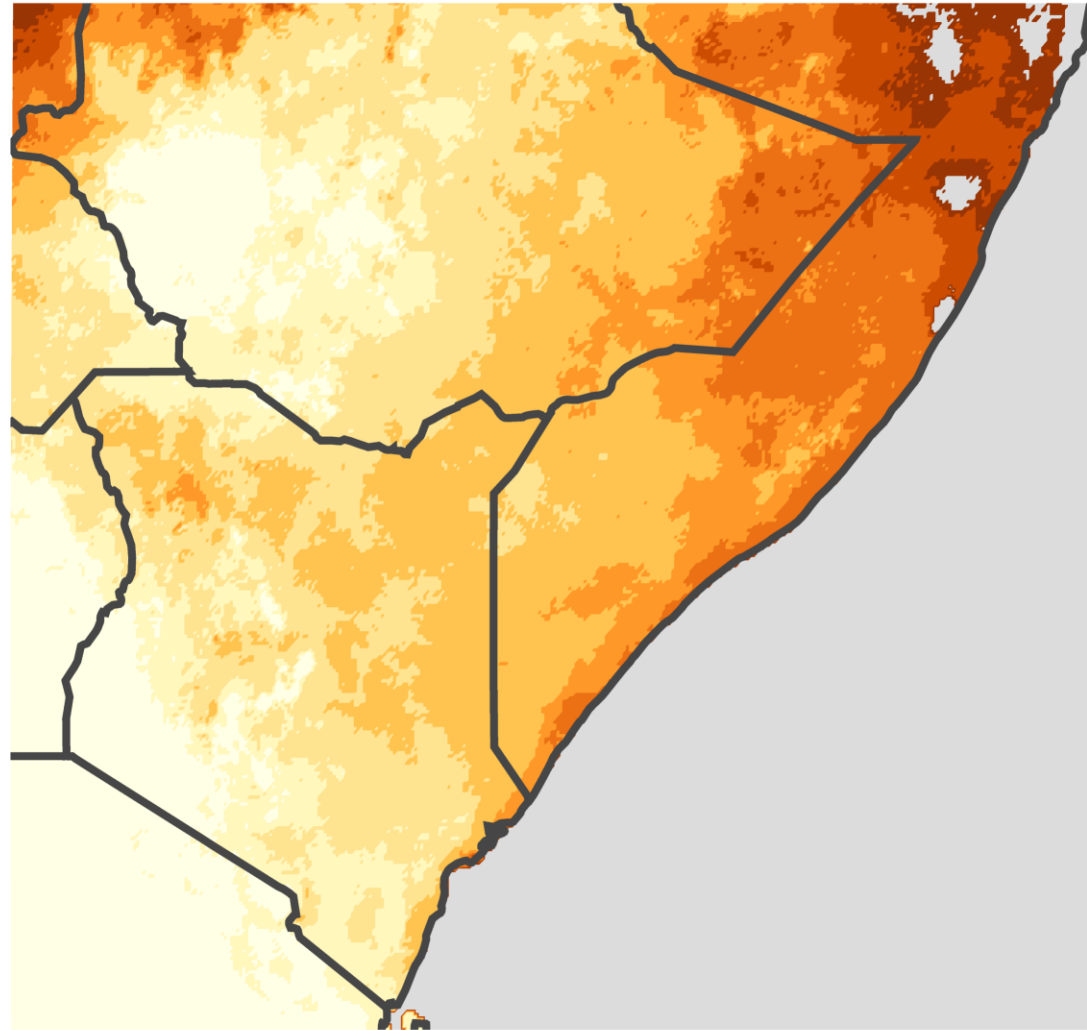
# Historical (2005-2025) chance of Start of Season



# Historical Start of Season Median (dekads)



# Historical Start of Season 20<sup>th</sup> Percentile (dekads)



# Historical Start of Season 80<sup>th</sup> Percentile (dekads)

