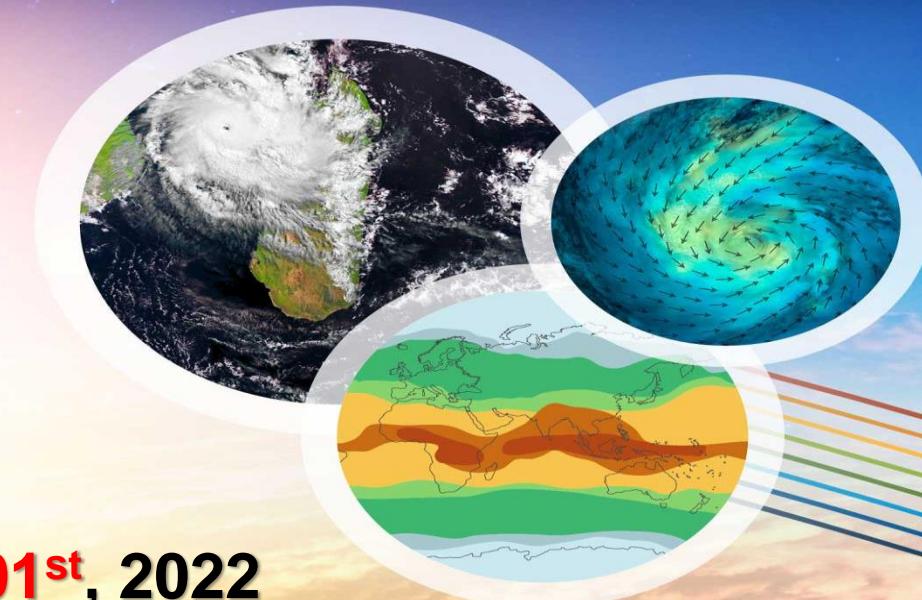
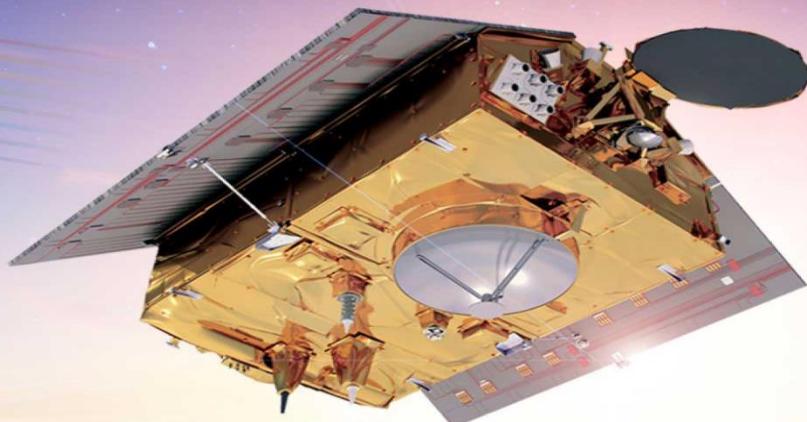


NTRA-ACP CLIMATE SERVICES AND RELATED APPLICATIONS PROGRAMME

## African Centre of Meteorological Applications for Development (ACMAD)

• Dekadal Technical Note  
• and Precipitation Outlook  
for Week 1 and 2



Issued on: **September 01<sup>st</sup>, 2022**

## Contributors

Name	Function	Date
Mr. Hubert N. Kabengela	Thematic Climate Monitoring and Seasonal Forecast expert	01-09-2022
Mr Leta Bekele	Resource Person – Secondment Expert	01-09-2022
Mr. Sunshine Gamedze	Short Term Climate Expert	01-09-2022
Dr. Pierre Kamsu	Senior Expert Forecaster	01-09-2022

## Versions

Version	Date	By	Descriptions
V0	01-09-2022	CDD Climate Experts	First draft for « Briefing », with all Climate's Expert contributions
Last	01-09-2022	Dr. Pierre Kamsu	Final Review

# 1. Climate Monitoring

- Forecast Verification
- Observed Mean Sea Level Pressure (MSLP) during last dekad
- Observed 500 hPa Geopotential Height during last dekad
- Observed Precipitation during last dekad
- Observed Temporal Variation of precipitation
- Start of Agricultural Season – Current Status and Outlook
- Observed OLR Anomalies during the passed dekad
- Observed Wind Anomaly at 850 and 700 hPa
- Observed Relative Humidity Anomaly
- Weekly and Monthly SST Anomaly Assessment

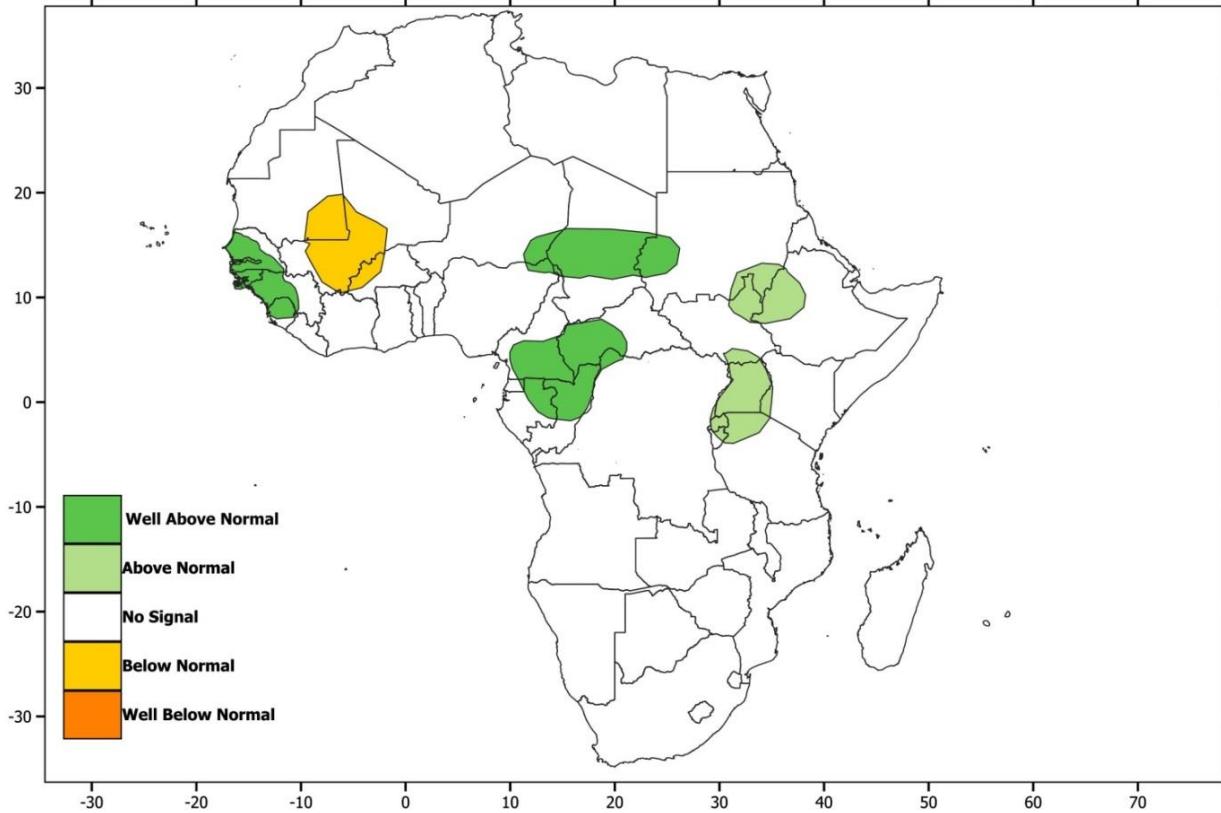
## 2. Status of Drivers

## 3. Dynamical Model Forecast : Week 1 and 2

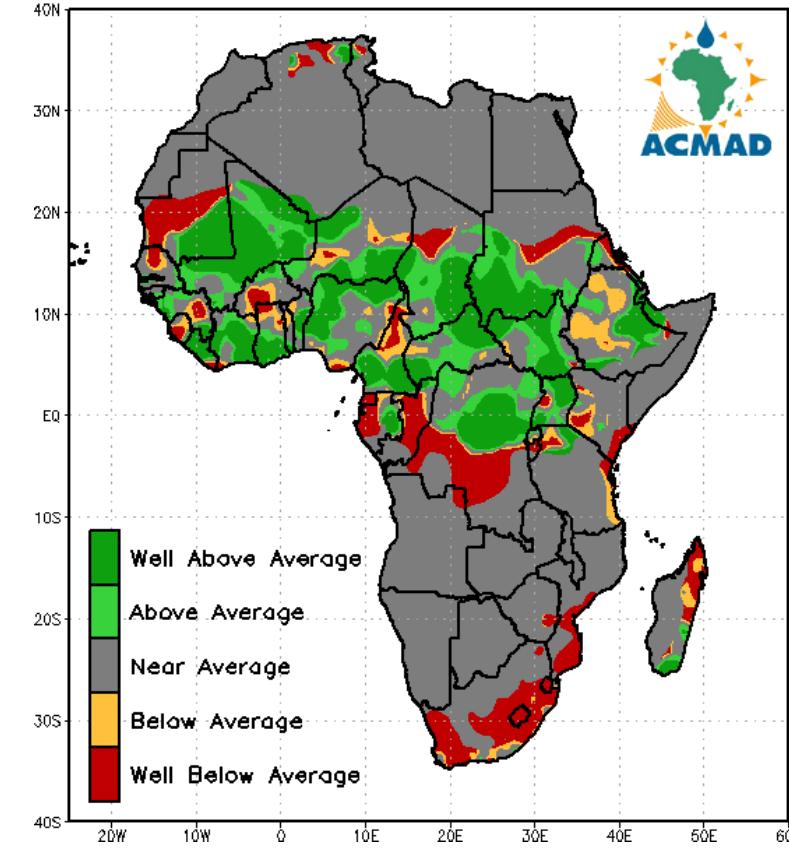
## 4. Week 1 and 2 Outlook

# Forecast Verification

PRECIP FCST WEEK1 22-29 AUGUST 2022



CPC-Uni 7day Precipitation in Percent of Average (%)  
Period: 23Aug2022 to 29Aug2022



# Mean Sea Level Pressure (MSLP) – Obs & Anom.

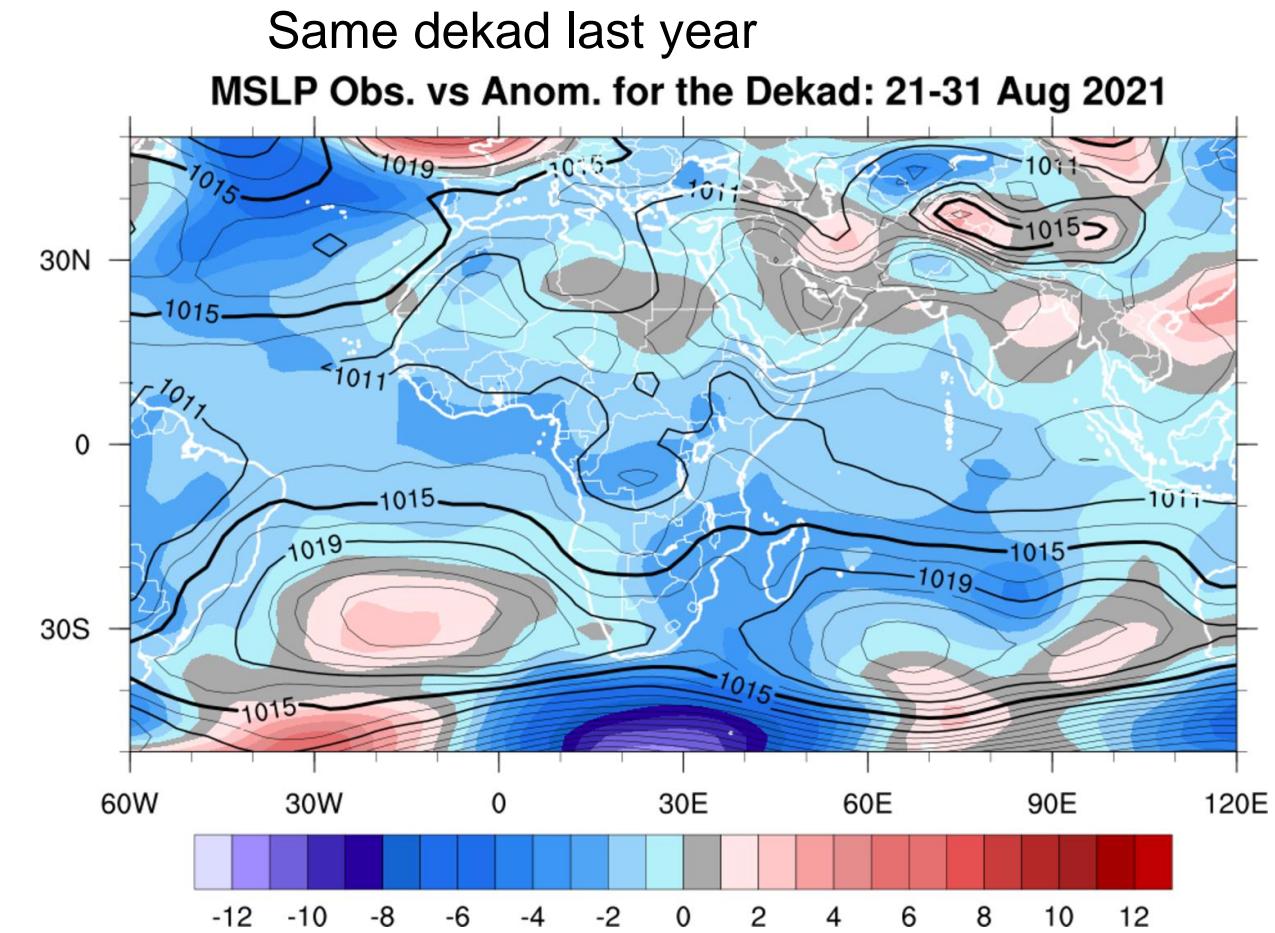
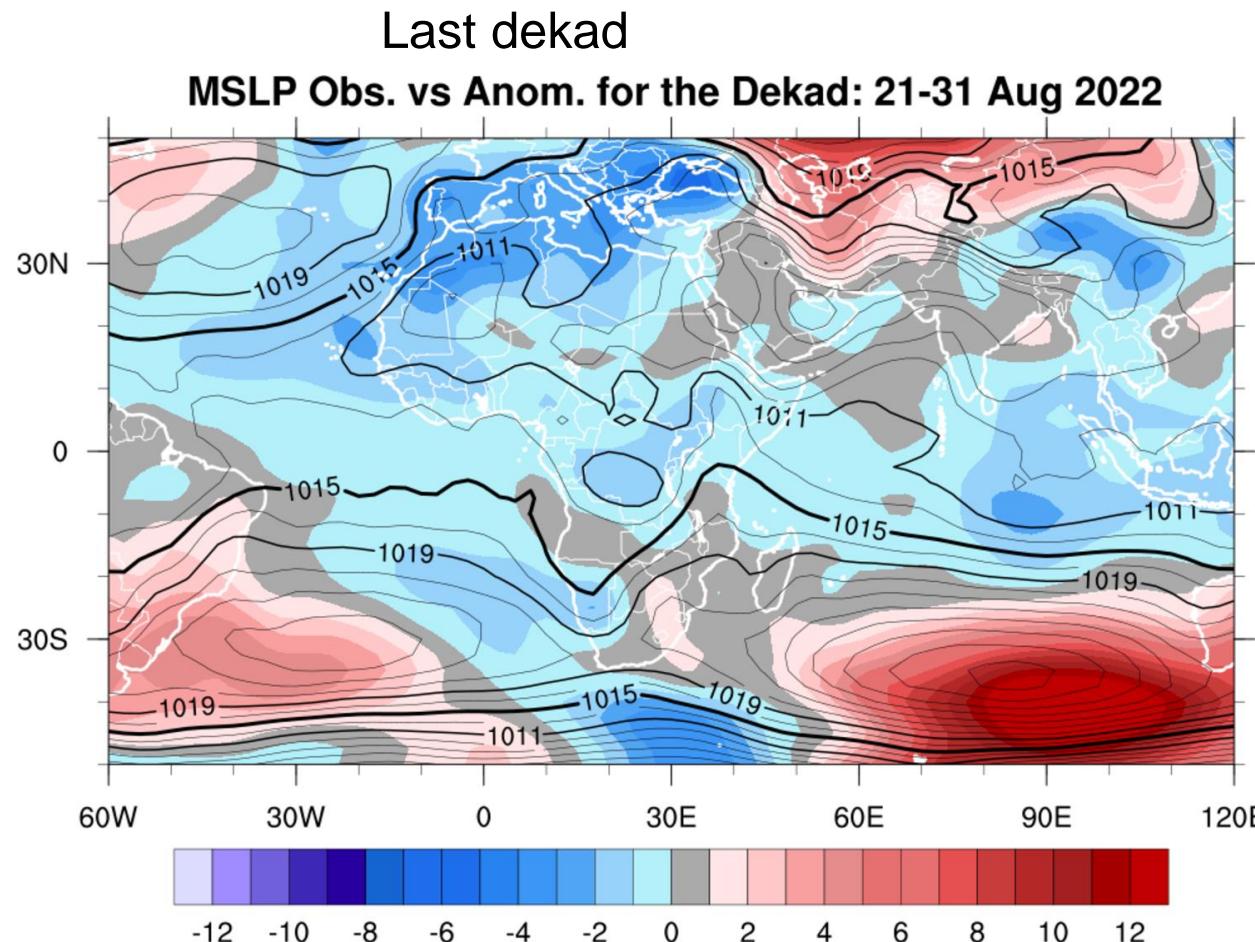


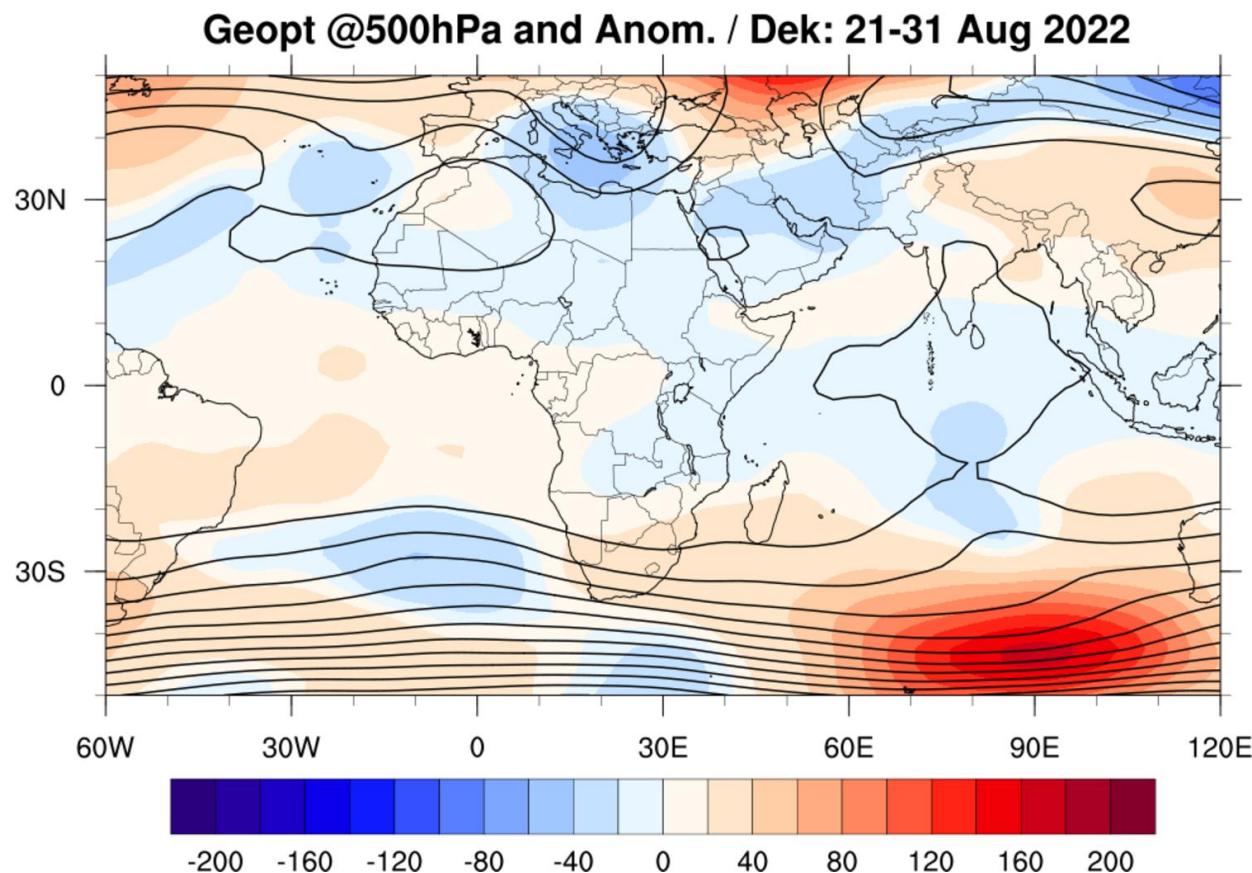
Figure 5: MSLP observation and anomaly

Data source:

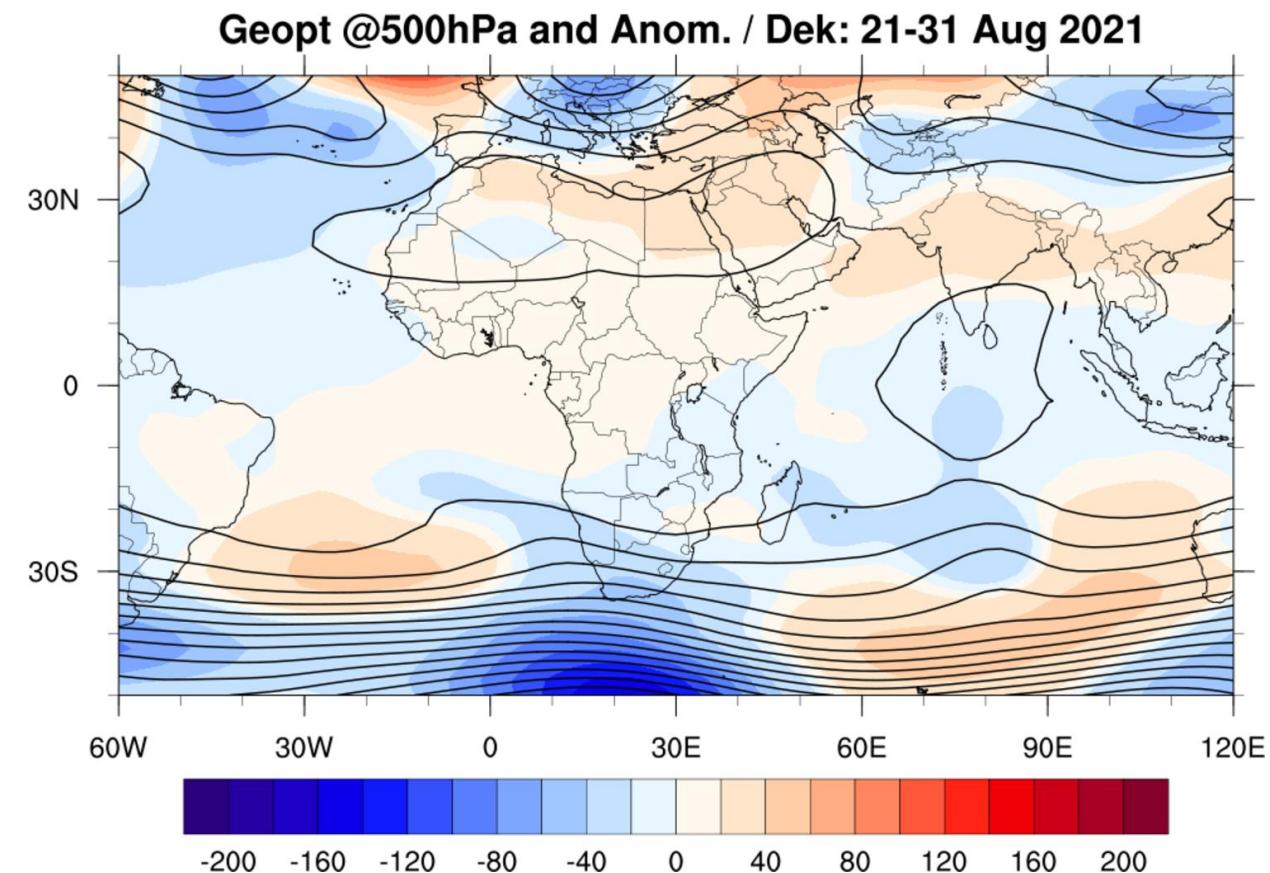
<http://iridl.ldeo.columbia.edu/expert/SOURCES/NOAA/NCEP-NCAR.CDAS-1/DAILY/Intrinsic/.MSL/.pressure>

# 500 hPa Geopotential Height (Z500) – Obs vs Anom.

Last dekad



Same dekad last year



# Estimated Cumulative Precipitation in % of average for the last Dekad

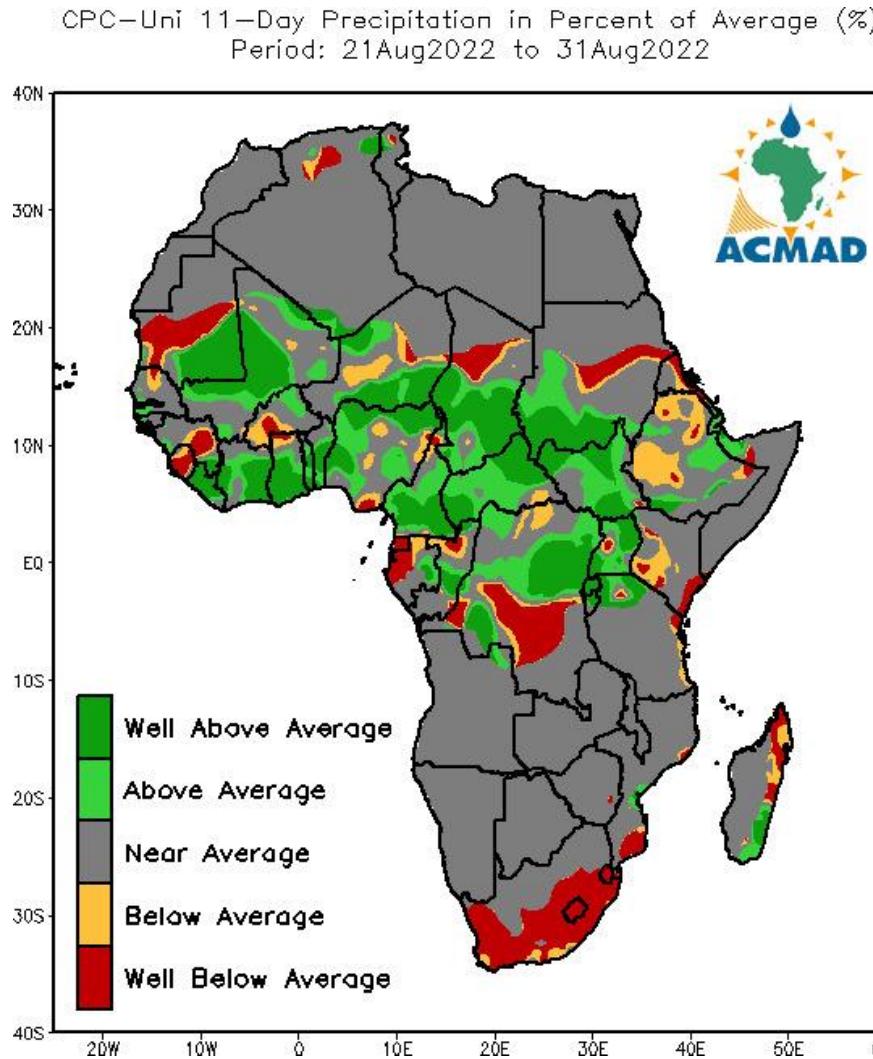
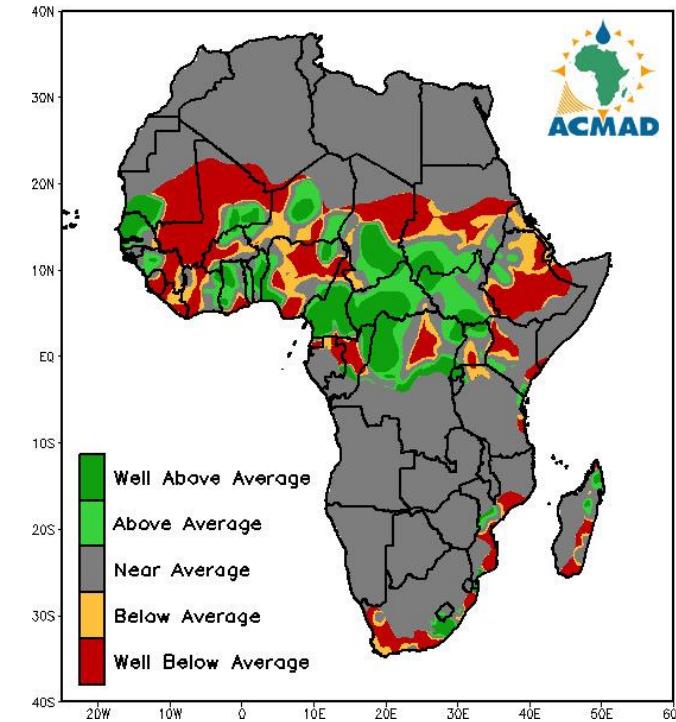


Figure 1: This map displays decadal average precipitation in percent of average

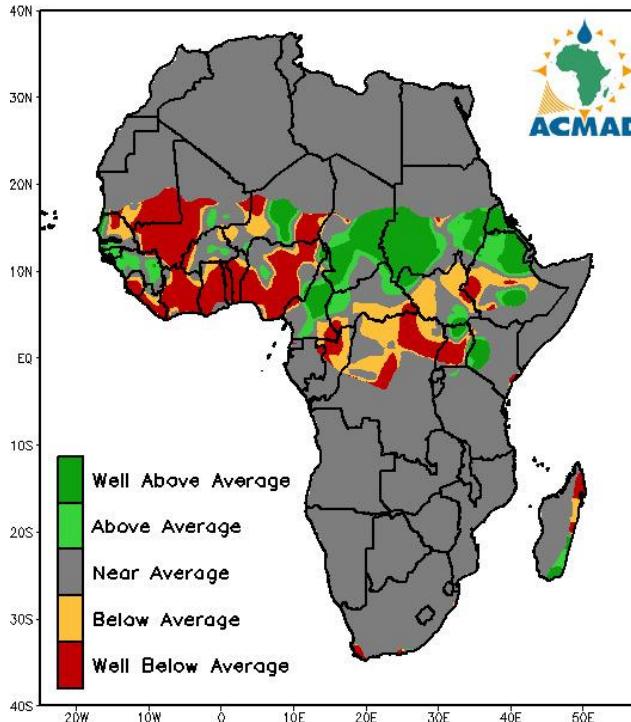
[Data : SOURCES/.NOAA/.NCEP/.CPC/.FEWS/.Africa/.DAILY/.ARC2/daily.est\\_prcp/X-20/0.5/70/GRID/Y-40/0.5/40/GRID/T/%2821-31%20Jul%202014%20%29RANGE/T/SUM/](https://sources.noaa.ncep.cpc.fews.africa.DAILY.AR2/daily.est_prcp/X-20/0.5/70/GRID/Y-40/0.5/40/GRID/T/%2821-31%20Jul%202014%20%29RANGE/T/SUM/)

# Temporal and Spatial Change of % of Average Precip for the Last Four Dekads

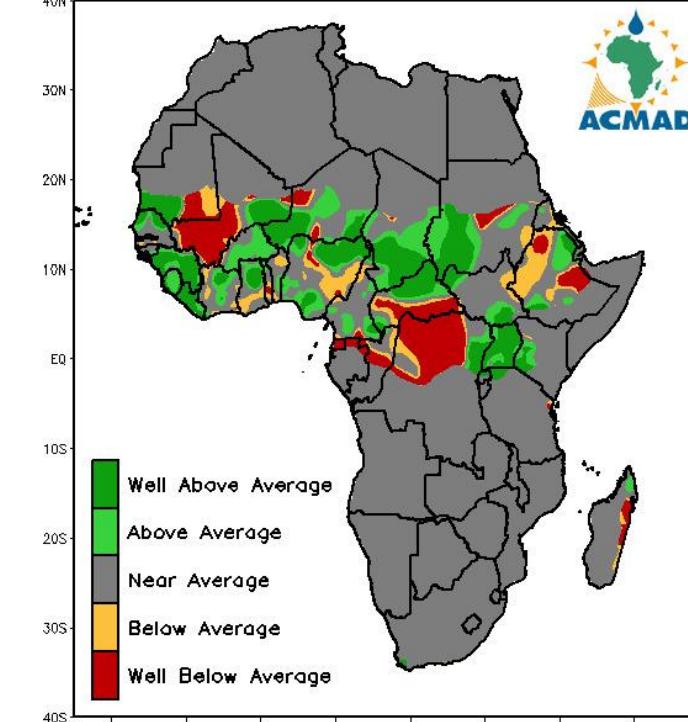
CPC-Uni 11-Day Precipitation in Percent of Average (%)  
Period: 21Jul2022 to 31Jul2022



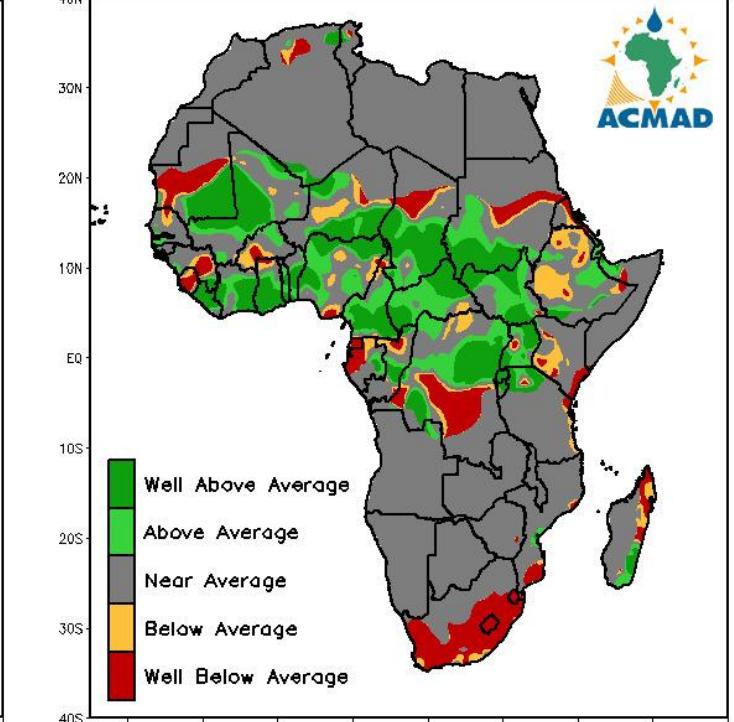
CPC-Uni 10-Day Precipitation in Percent of Average (%)  
Period: 01Aug2022 to 10Aug2022



CPC-Uni 10-Day Precipitation in Percent of Average (%)  
Period: 11Aug2022 to 20Aug2022



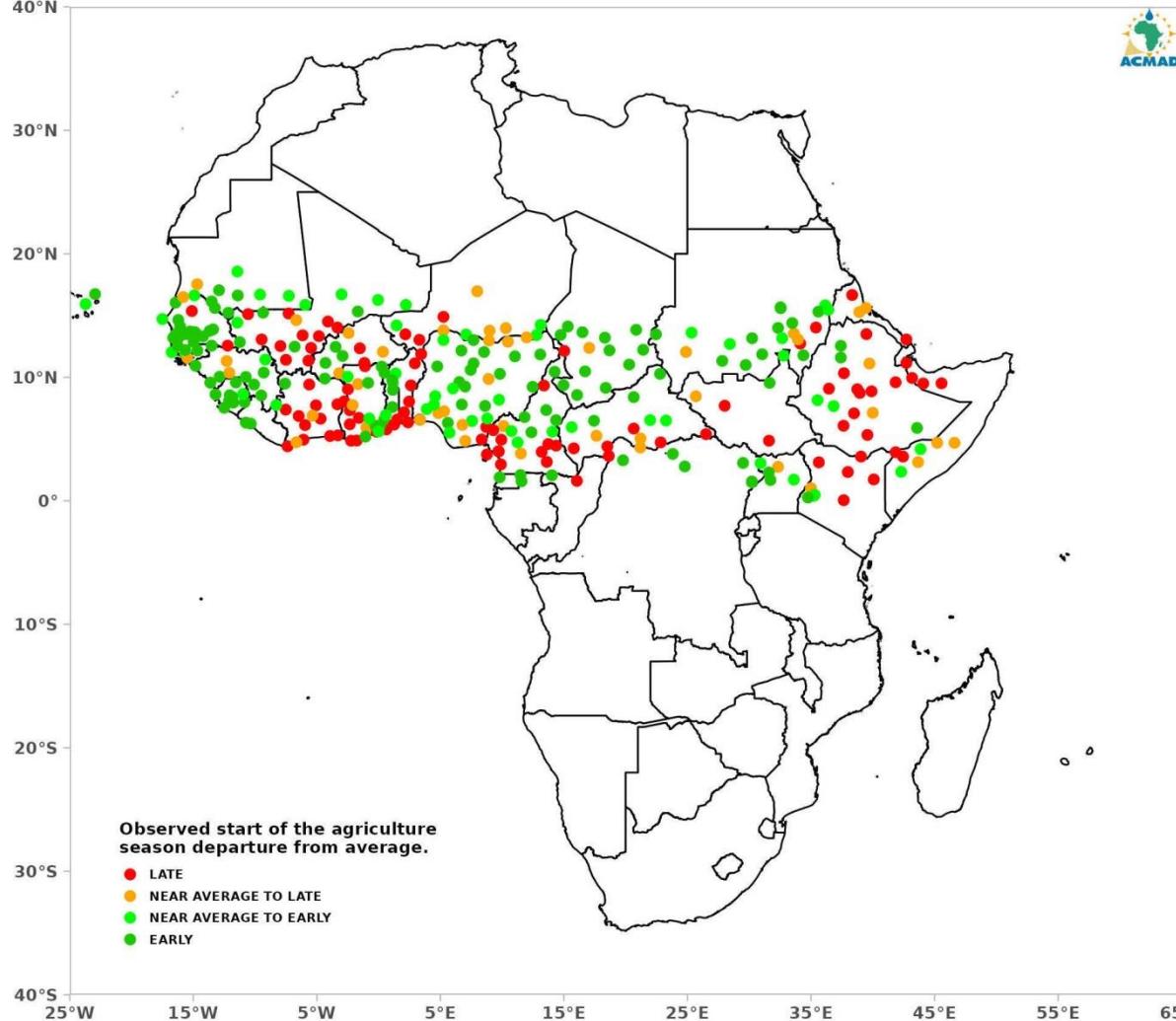
CPC-Uni 11-Day Precipitation in Percent of Average (%)  
Period: 21Aug2022 to 31Aug2022



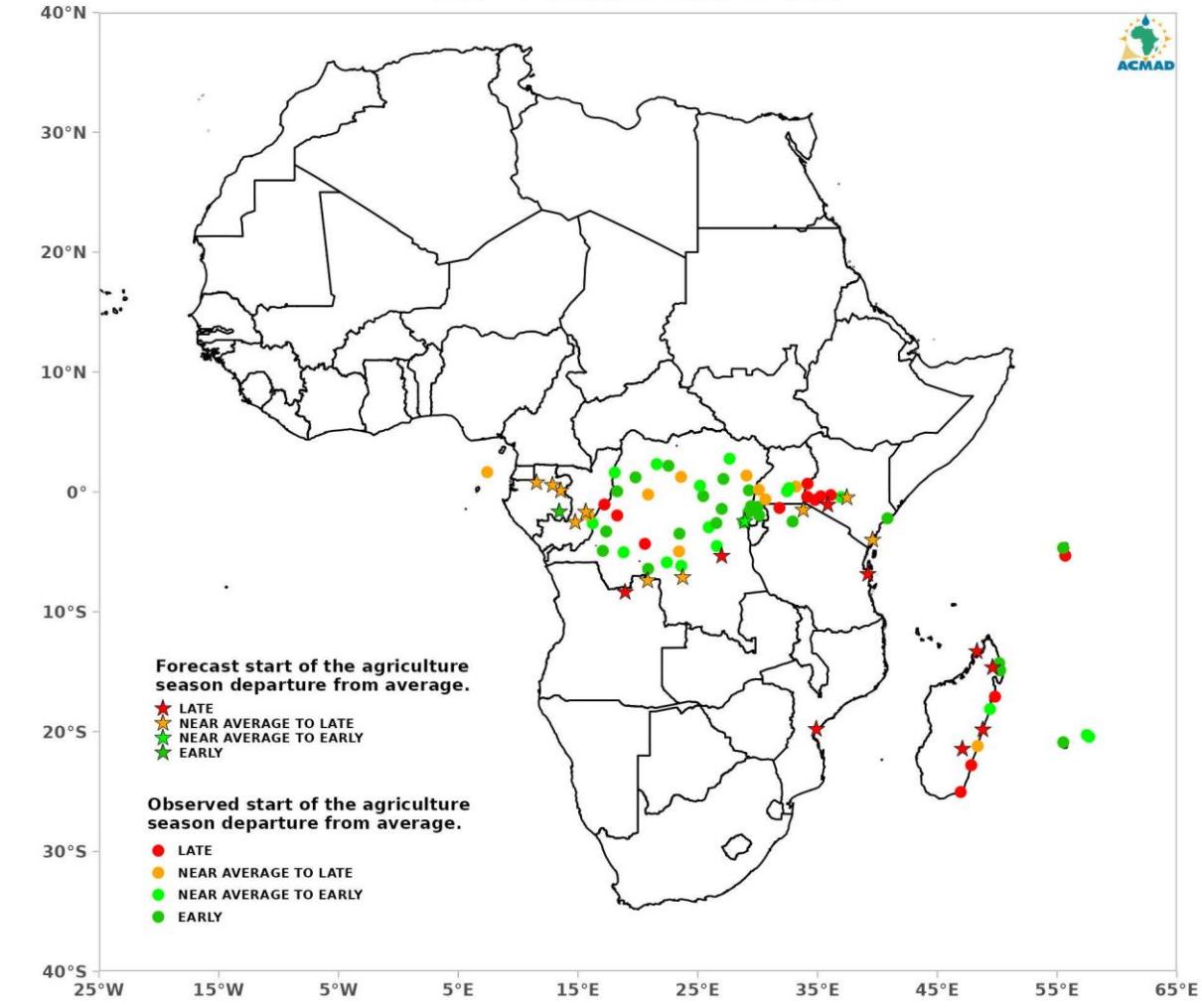
**Figure 2:** This maps display decadal average precipitation in percent of average

# Start of Agricultural Season – Current and Outlook

MONITORING OF OBSERVED ANOMALIES ON THE START OF THE AGRICULTURE SEASON AND OUTLOOK.  
MONITORING PERIOD: JANUARY-AUGUST 2022.

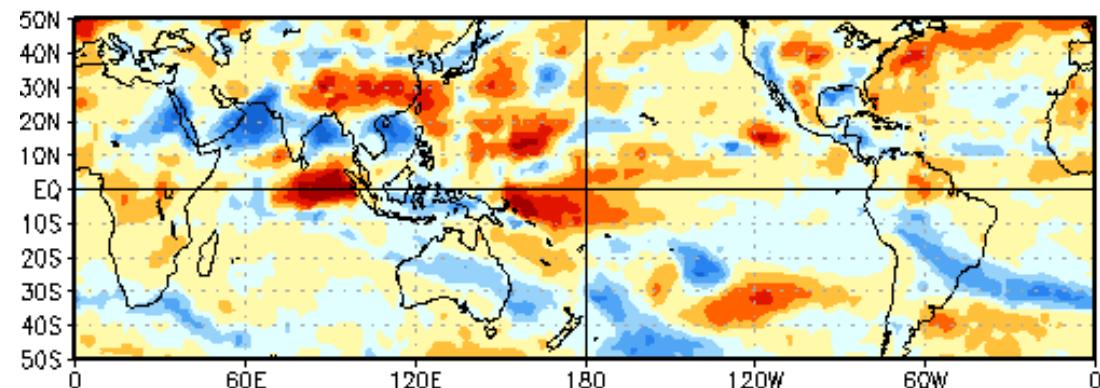


MONITORING OF OBSERVED ANOMALIES ON THE START OF THE AGRICULTURE SEASON AND OUTLOOK.  
MONITORING PERIOD: JULY-DECEMBER 2022.  
OUTLOOK VALIDITY PERIOD: AUGUST 25 TO SEPTEMBER 08 2022 .  
DATE OF ISSUE: AUGUST-25-2022.

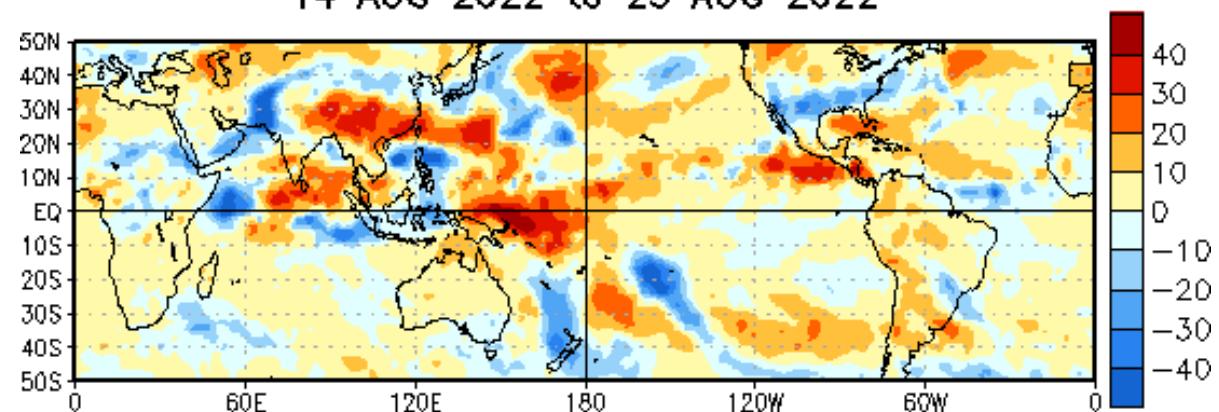


# OLR Anomalies During the passed 3 Dekads

OLR Anomalies  
4 AUG 2022 to 13 AUG 2022



14 AUG 2022 to 23 AUG 2022



24 AUG 2022 to 2 SEP 2022

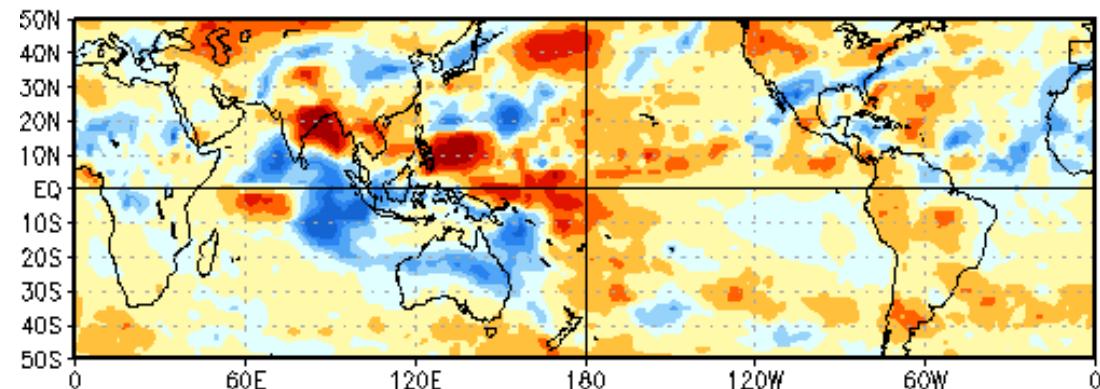
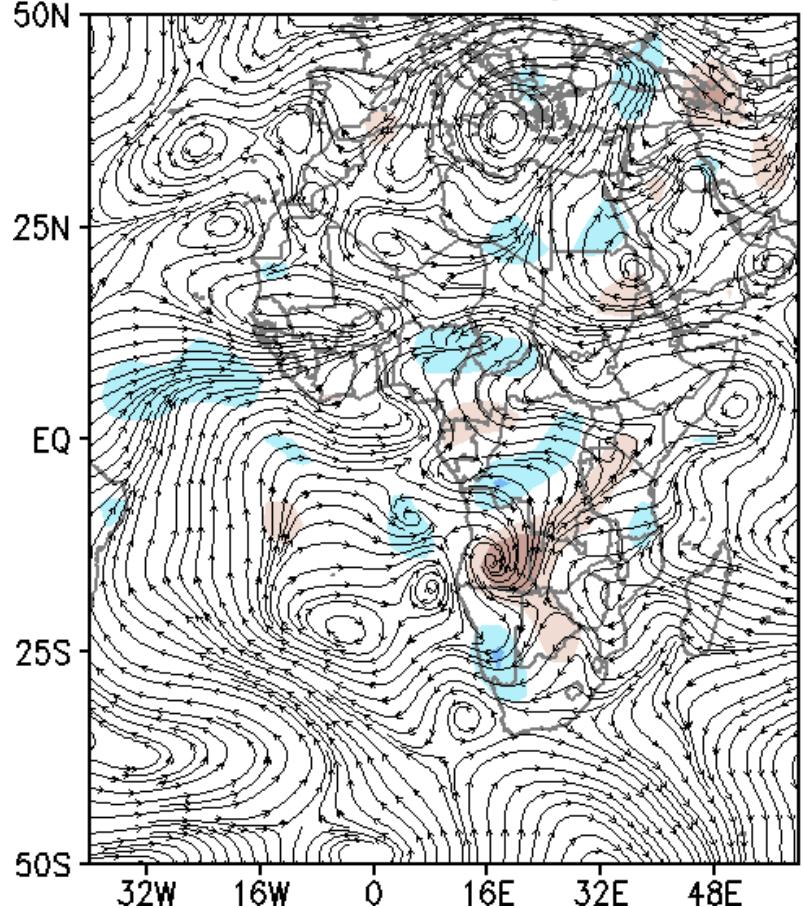


Figure 4: Past 3 weeks OLR anomalies

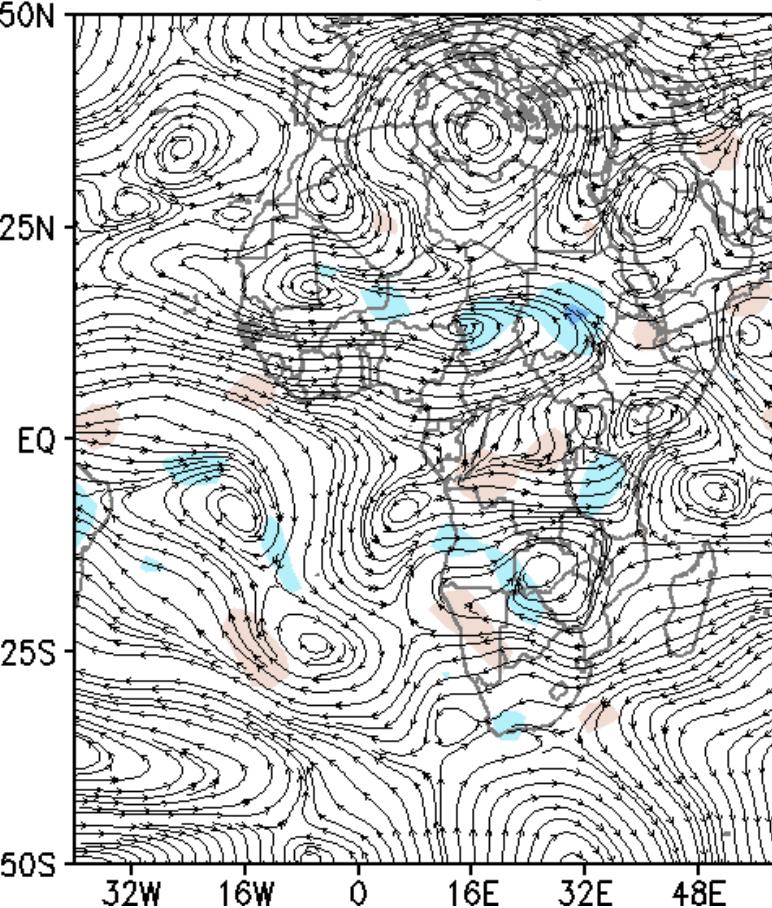
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/olra\\_last30days-3plots.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/olra_last30days-3plots.gif)

# Wind Anomalies for the last 7 day period 850hpa, 700hpa and 200hpa

CDAS 850hPa Divergence and Wind Anom.  
Dekad: 21–31 Aug 2022



CDAS 700hPa Divergence and Wind Anom.  
Dekad: 21–31 Aug 2022



CDAS 200hPa Divergence and Wind Anom.  
Dekad: 21–31 Aug 2022

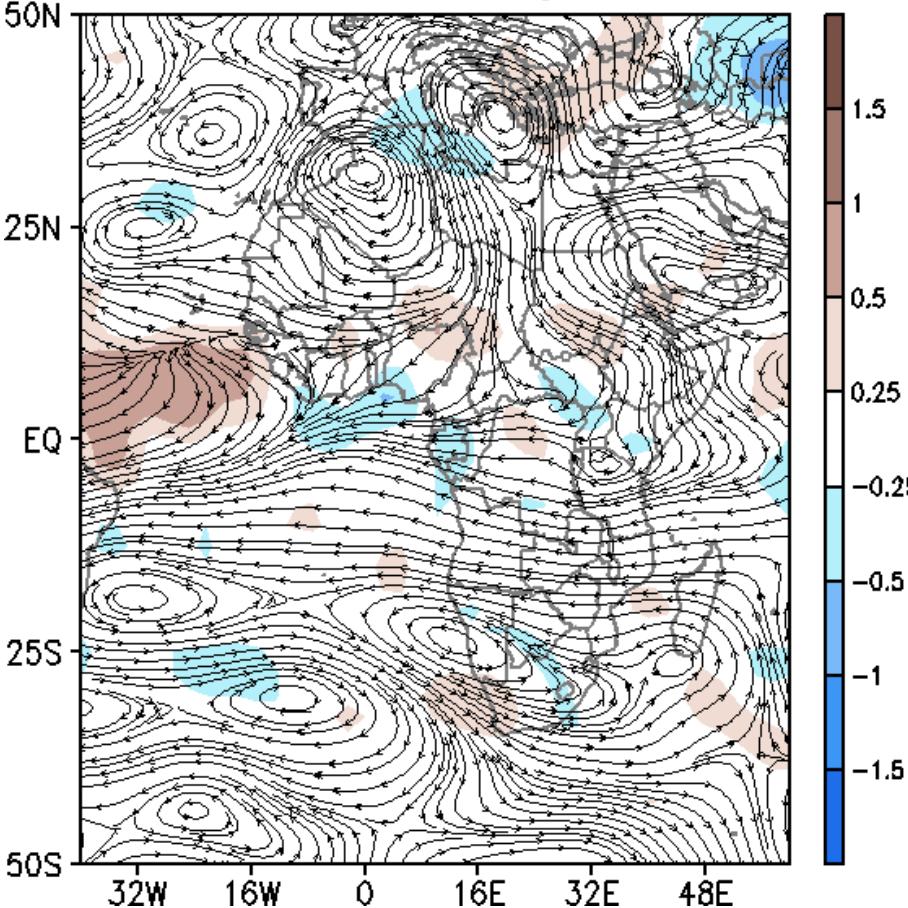
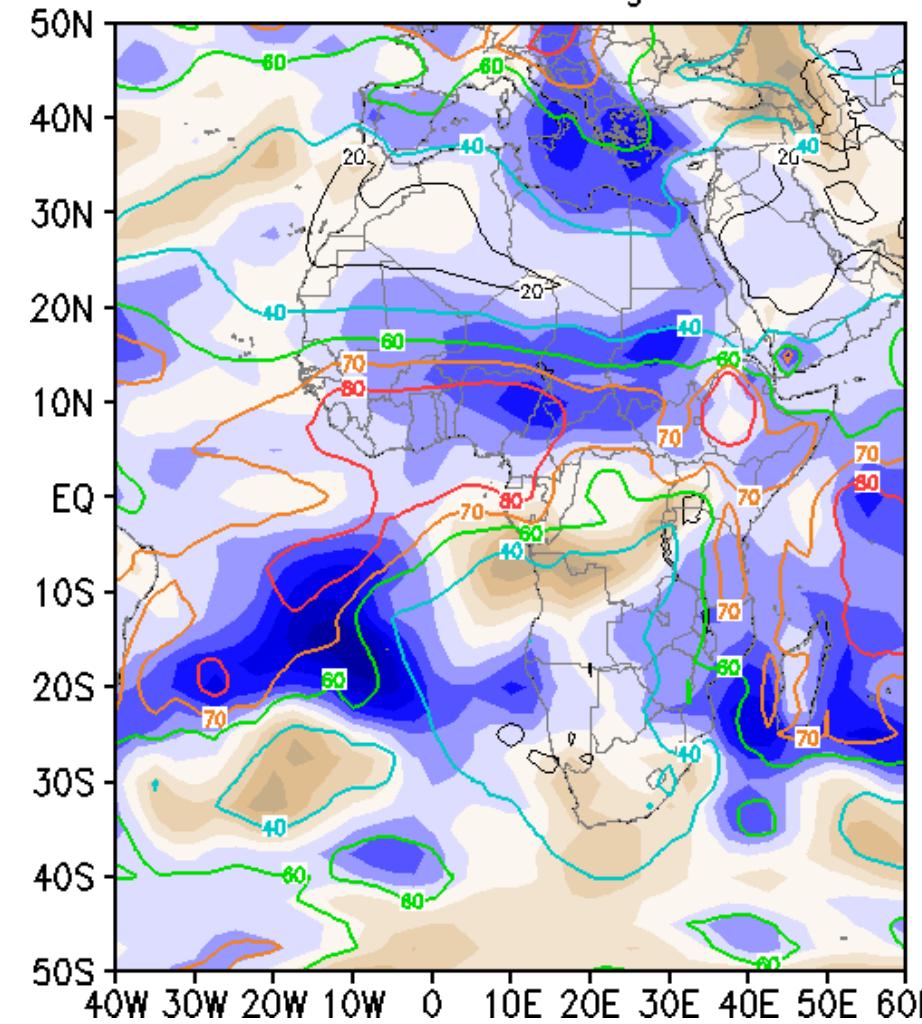


Figure 7: Wind anomalies for 850hpa, 700hPa and 200hpa

<https://www.cpc.ncep.noaa.gov/products/international/africa/africa.shtml>  
Climate Prediction Center - African Desk: SWFDP GFS FORECASTS  
(noaa.gov)

# Relative Humidity (RH) Anomalies at 850hpa and 700hpa for the last Dekad

CDAS 850hPa Rel. Hum. and Anom.  
Dekad: 21–31 Aug 2022



CDAS 700hPa Rel. Hum. and Anom.  
Dekad: 21–31 Aug 2022

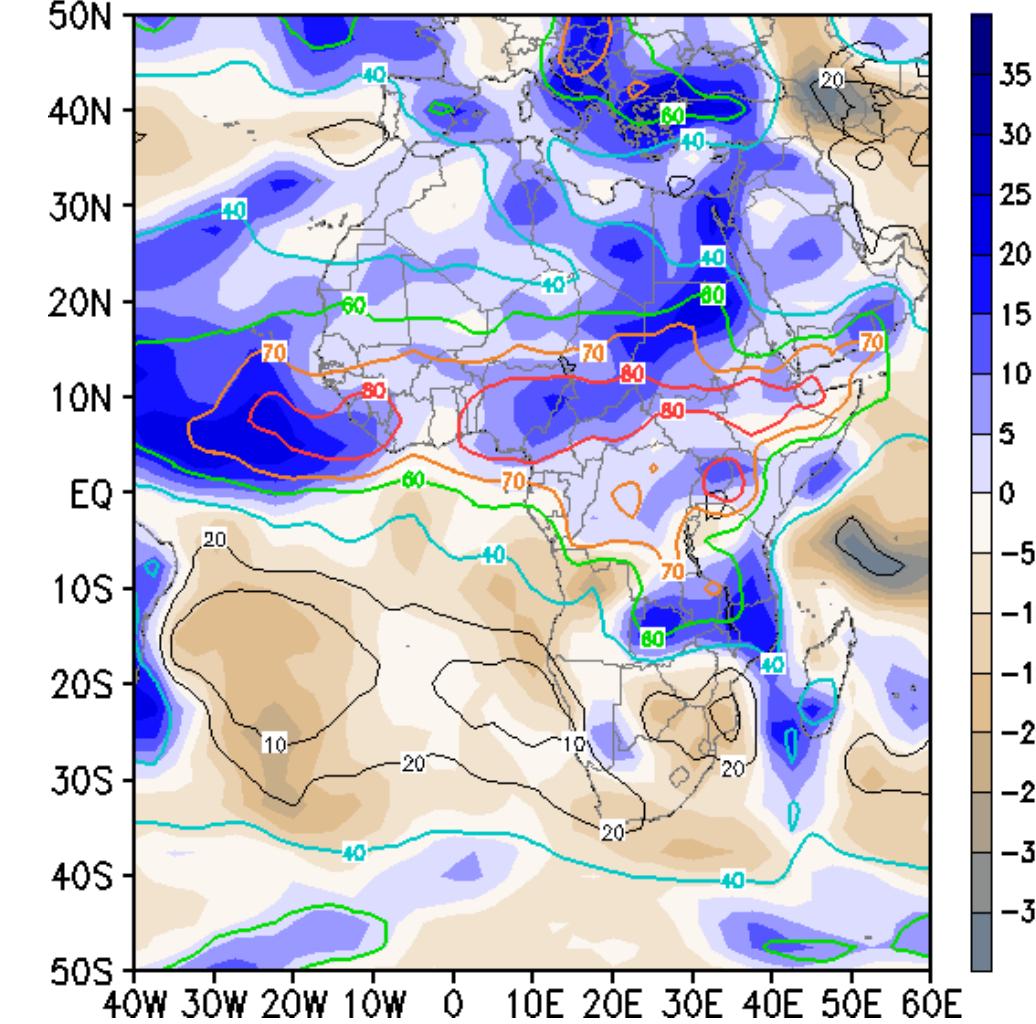
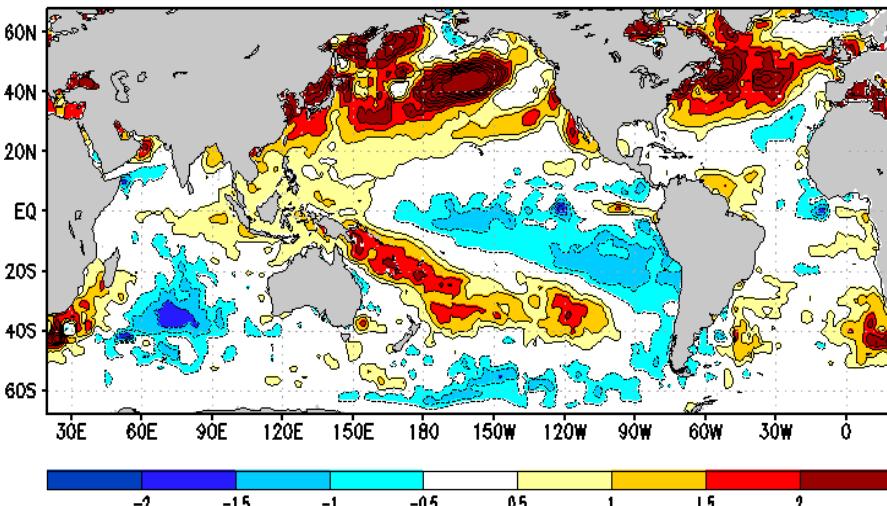


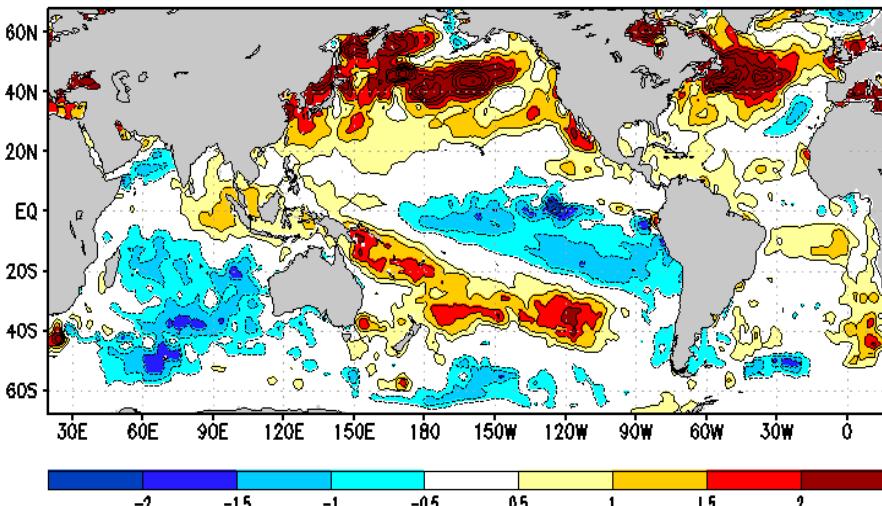
Figure 8: Relative Humidity Anomaly at 850hPa (left) and 700hPa (right)

# Weekly Sea Surface Temperature Anomaly during the last four weeks

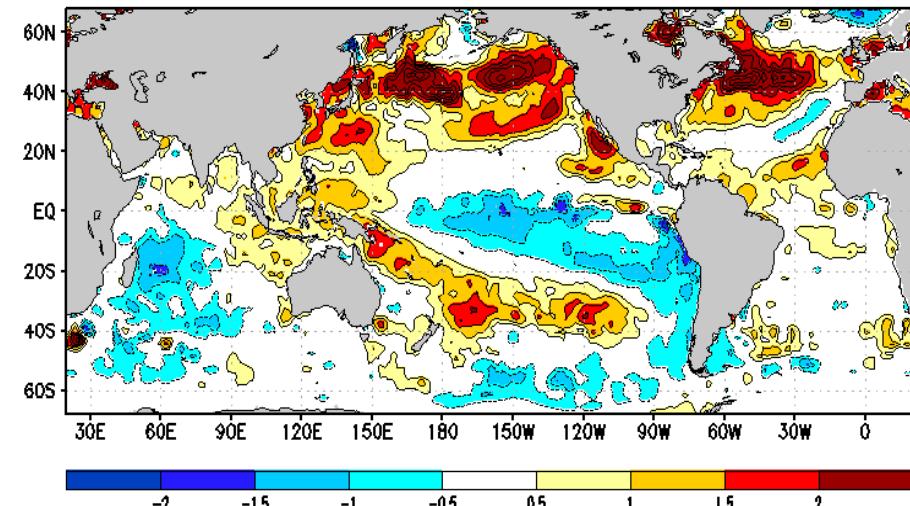
SST Anom. for the Week From 07Aug2022 to 13Aug2022



SST Anom. for the Week From 14Aug2022 to 20Aug2022



SST Anom. for the Week From 21Aug2022 to 27Aug2022



SST Anom. for the Week From 28Aug2022 to 03Sep2022

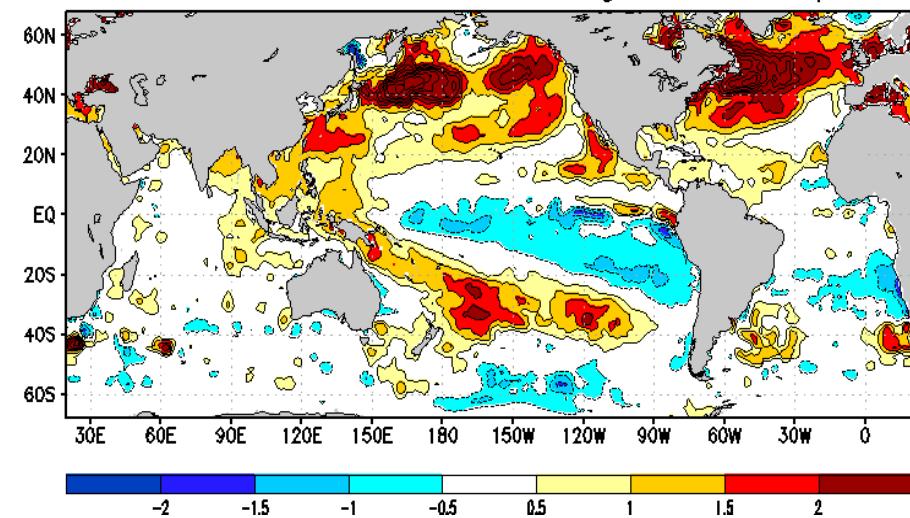


Figure 9: Maps display weekly sea surface temperature anomalies over the globe for last four weeks

<https://psl.noaa.gov/map/clim/sst.shtml>

[http://iridl.ideo.columbia.edu/maproom/Global/Ocean\\_Temp/Weekly\\_Anomaly.html](http://iridl.ideo.columbia.edu/maproom/Global/Ocean_Temp/Weekly_Anomaly.html)

[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/weekly/sst\\_anom\\_Week1.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/weekly/sst_anom_Week1.png)

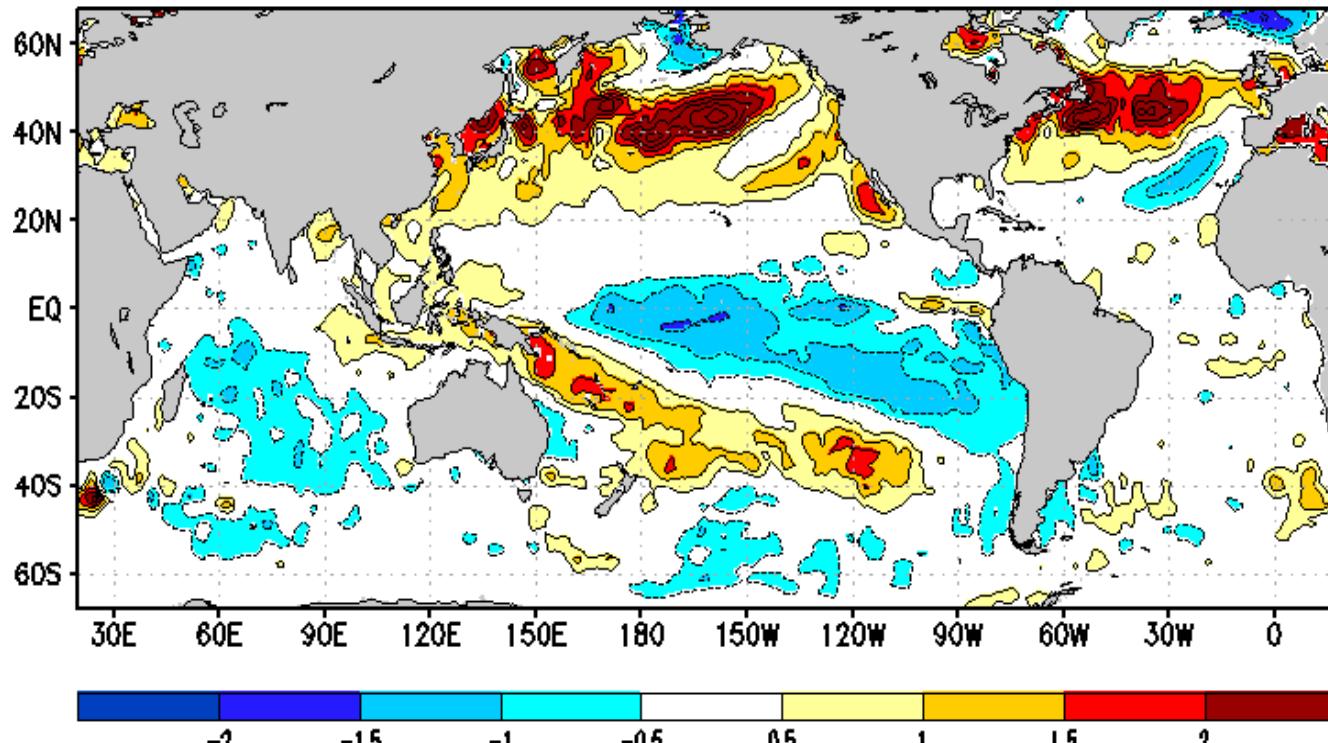
[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/weekly/sst\\_anom\\_Week2.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/weekly/sst_anom_Week2.png)

[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/weekly/sst\\_anom\\_Week3.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/weekly/sst_anom_Week3.png)

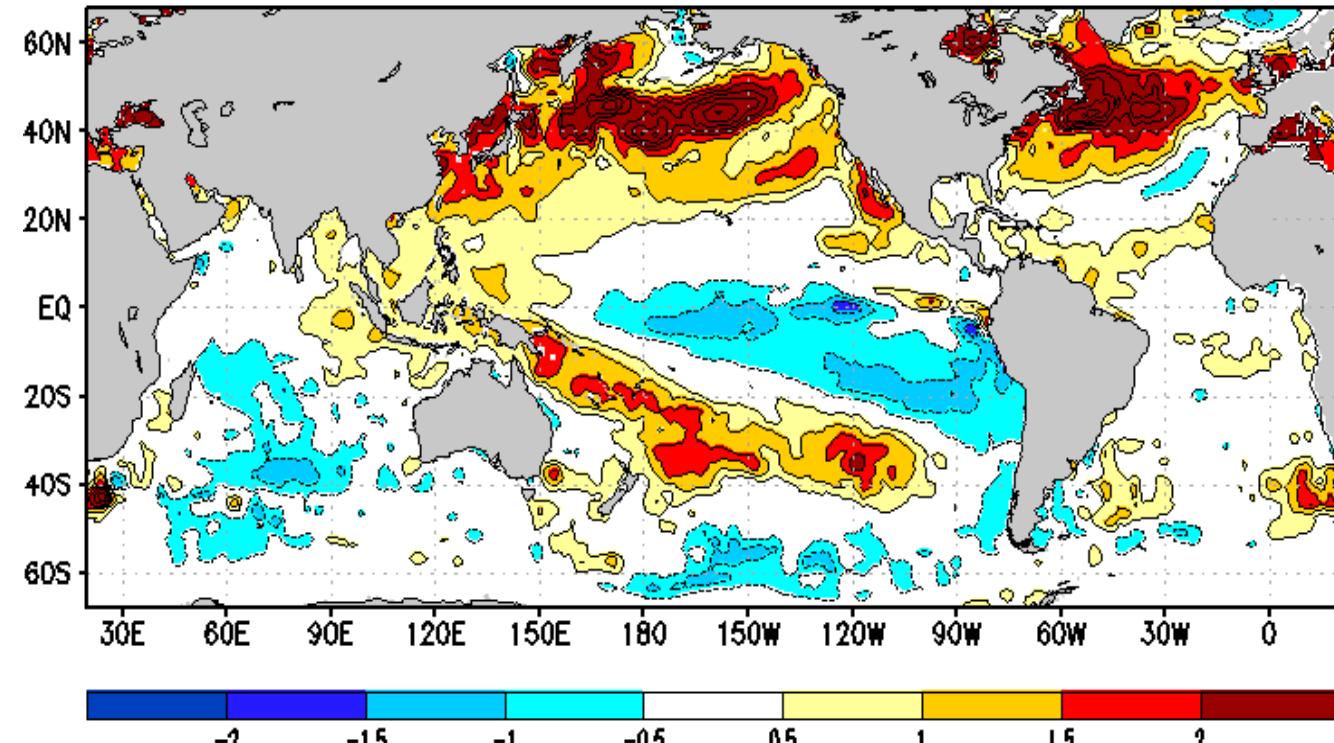
[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/weekly/sst\\_anom\\_Week4.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/weekly/sst_anom_Week4.png)

# Last Month's Sea Surface Temperatures (SST) Observed

SST Anom. for Aug2022



SST Anom. for the Week From 07Aug2022 to 03Sep2022



**Figure 10 :** Maps display monthly sea surface temperature anomalies over the globe.

<https://psl.noaa.gov/map/clim/sst.shtml>

[http://iridl.ideo.columbia.edu/maproom/Global/Ocean\\_Temp/Anomaly.html](http://iridl.ideo.columbia.edu/maproom/Global/Ocean_Temp/Anomaly.html)

[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/weekly/sst\\_anom\\_4Weeks.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/weekly/sst_anom_4Weeks.png)

[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/OBS\\_SST\\_ANOM/monthly/mth\\_anom\\_vs\\_9120/sst\\_anom\\_last-Month.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/OBS_SST_ANOM/monthly/mth_anom_vs_9120/sst_anom_last-Month.png)

## **1. Climate Monitoring**

## **2. Status of Drivers**

- ENSO - Obs and Forecast
- Current 200 hPa Velocity Potential
- MJO – Current Status and Forecast
- Weekly PWAT – Current Status and Forecast
- Dekadal 200 hPa VP and Tropical waves
- Dekadal Stream Function and Tropical Waves

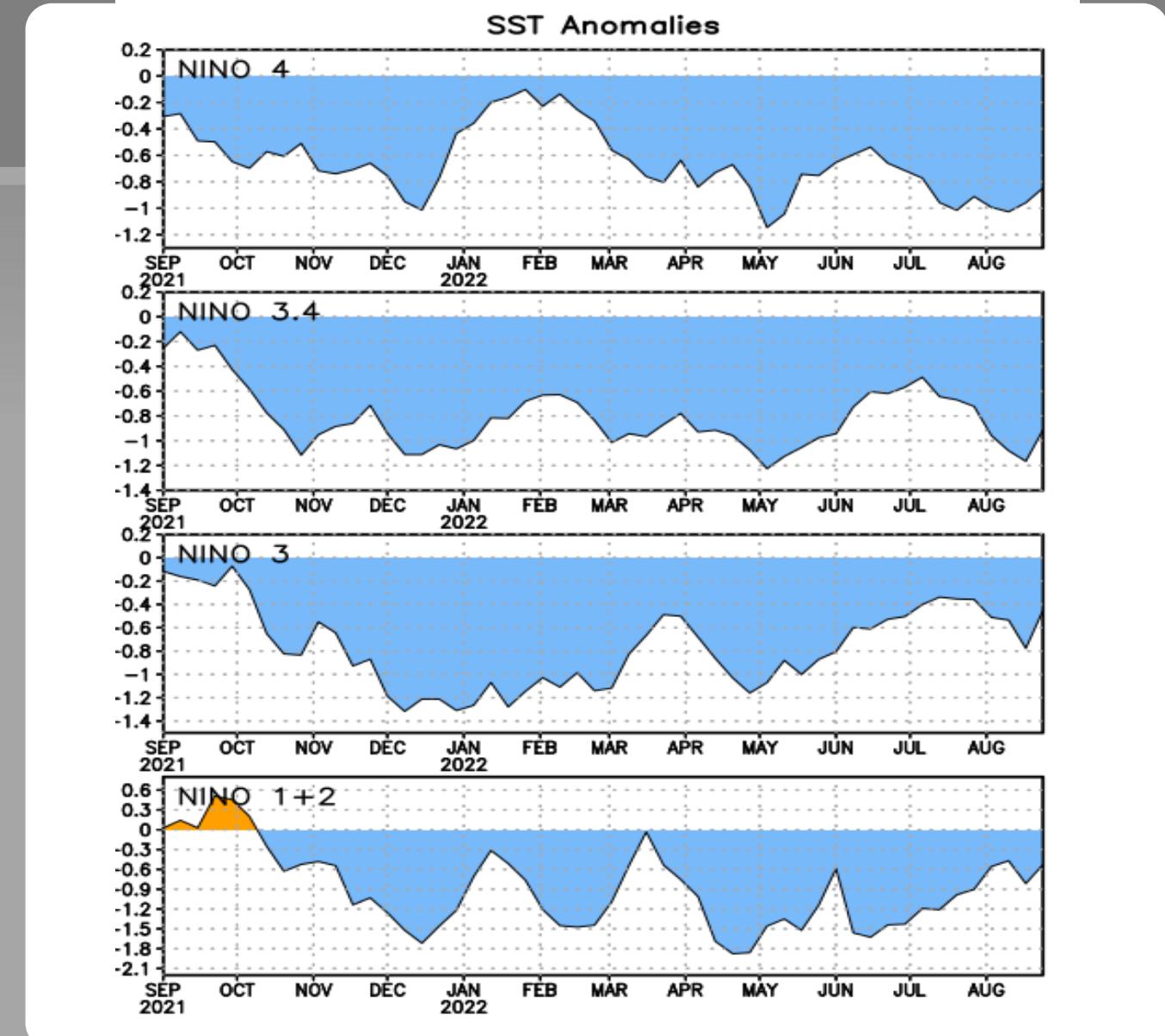
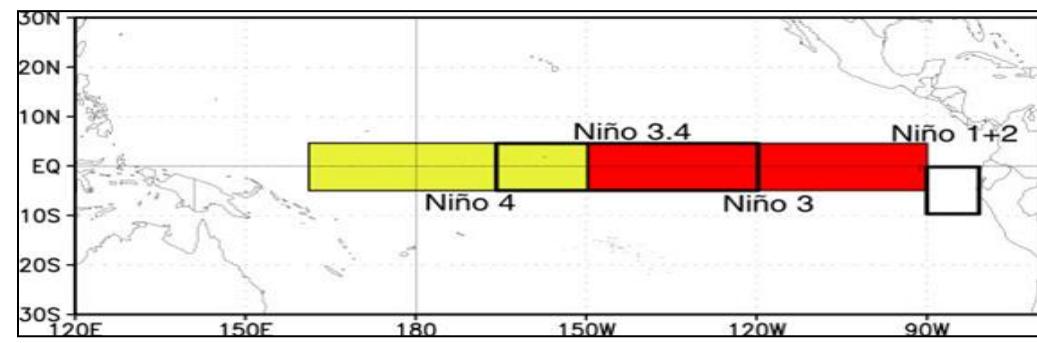
## **3. Dynamical Model Forecast : Week 1 and 2**

## **4. Week 1 and 2 Outlook**

# Niño Region SST Departures (°C) Recent Evolution

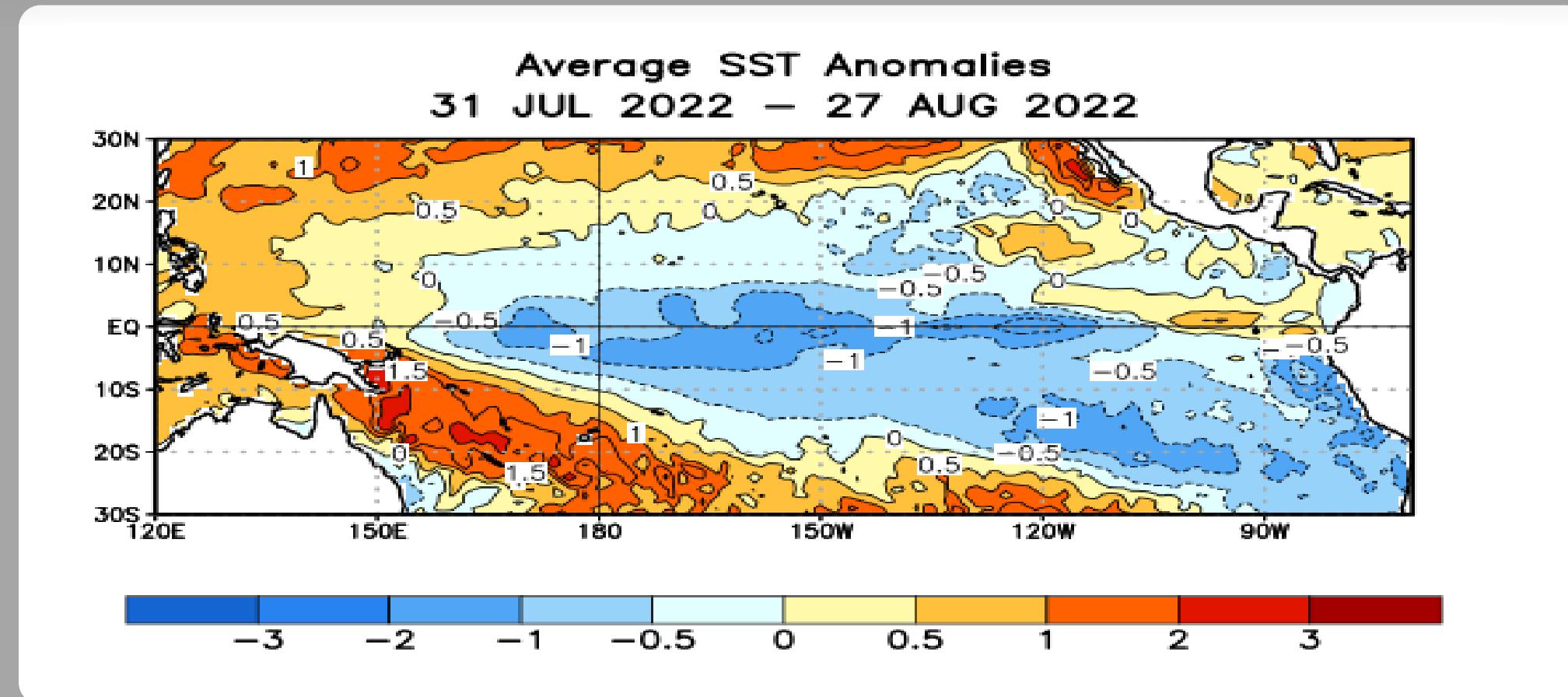
The latest weekly SST  
departures are:

Niño 4	-1.0°C
Niño 3.4	-1.1°C
Niño 3	-0.5°C
Niño 1+2	-0.5°C



# SST Departures ( $^{\circ}\text{C}$ ) in the Tropical Pacific During the Last Four Weeks

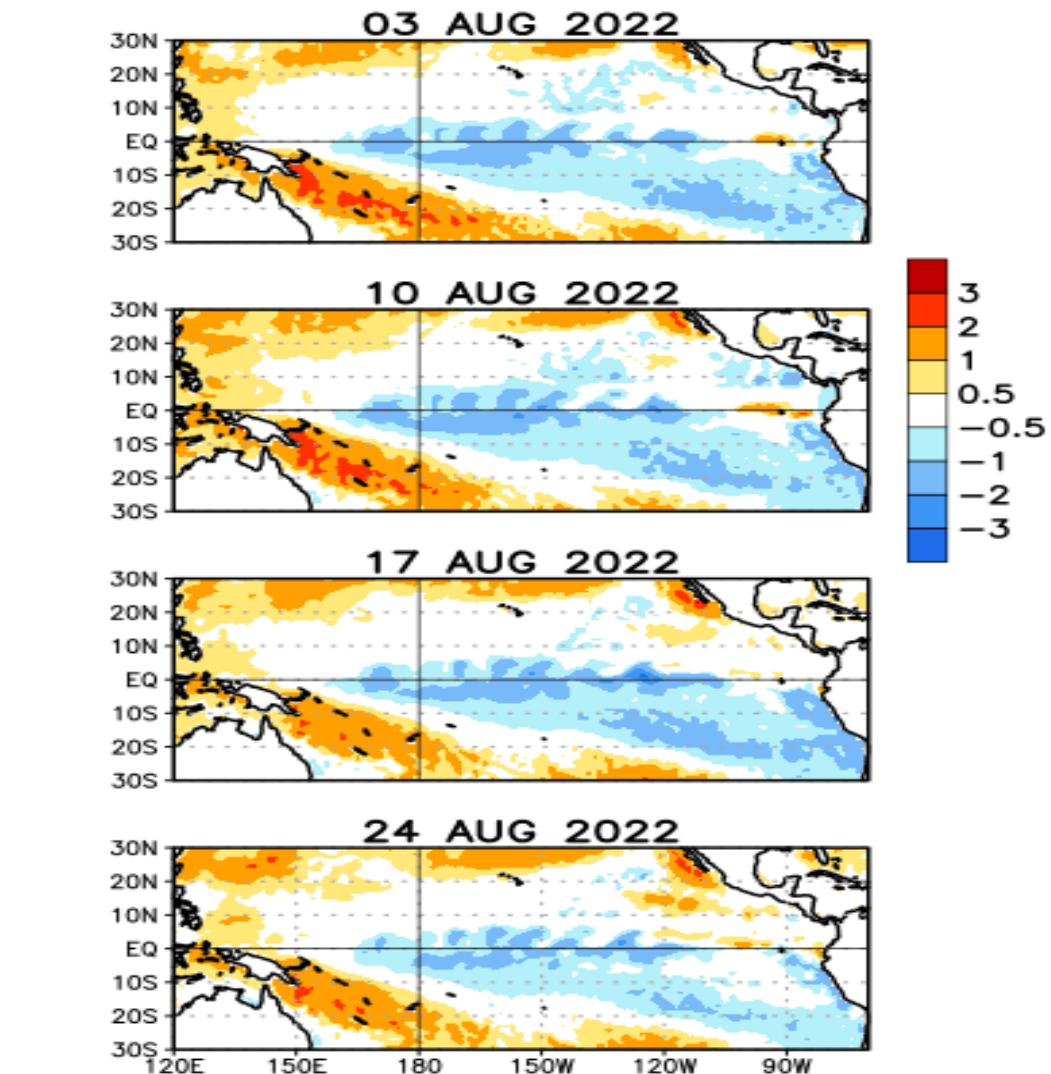
In the last four weeks, equatorial SSTs were below average across most of the Pacific Ocean, with the exception of above average SSTs in the eastern Pacific.



# Weekly SST Departures during the Last Four Weeks

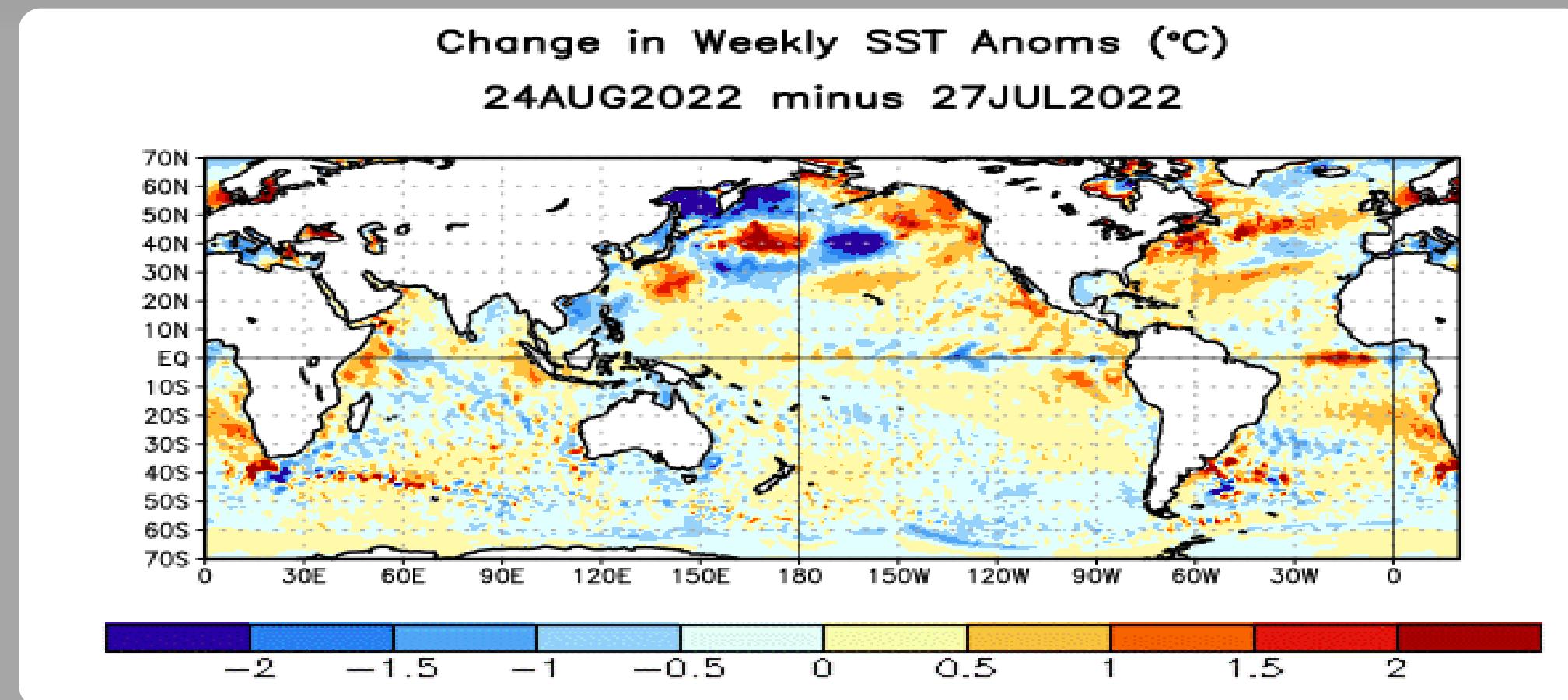
During the last 4 weeks, negative SST anomalies have persisted across the central and east-central equatorial pacific.

Weekly SST Anomalies (DEG C)



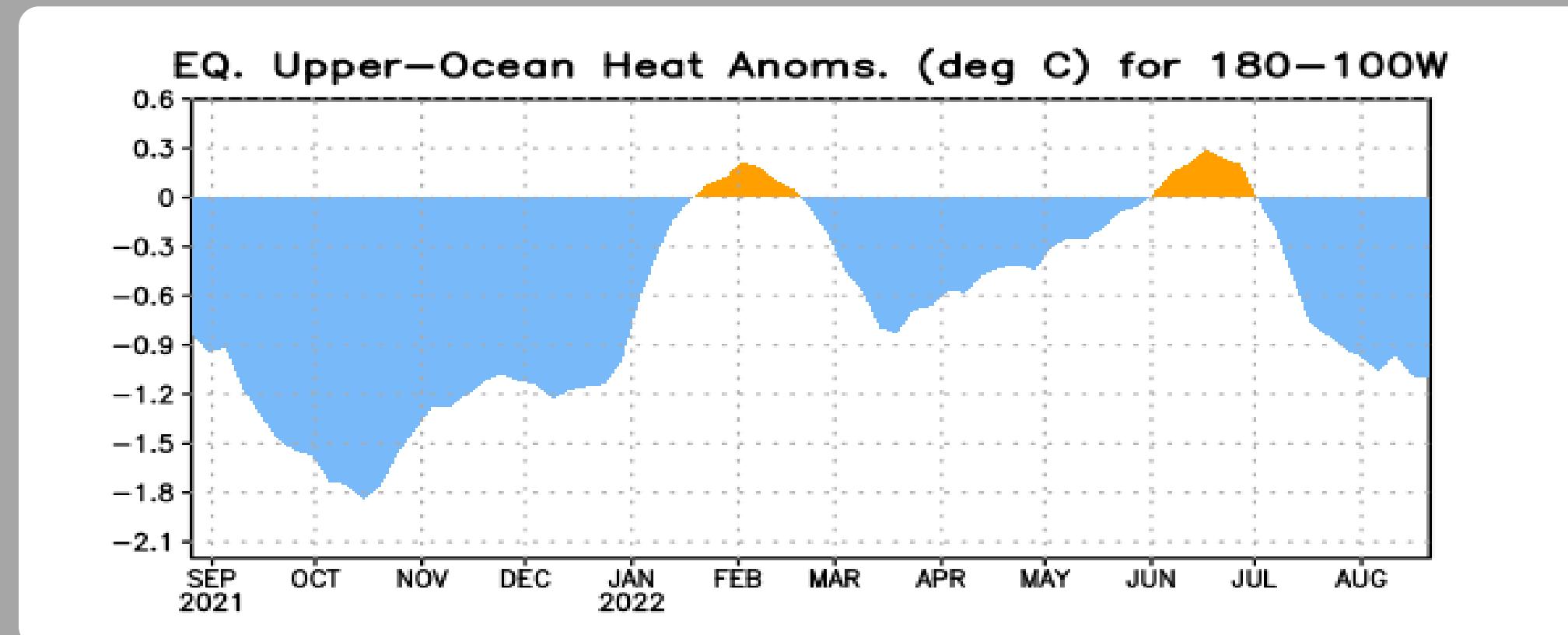
# Change in Weekly SST Departures over the Last Four Weeks

During the last four weeks, small positive and negative changes in equatorial SST anomalies were observed across the Pacific Ocean.



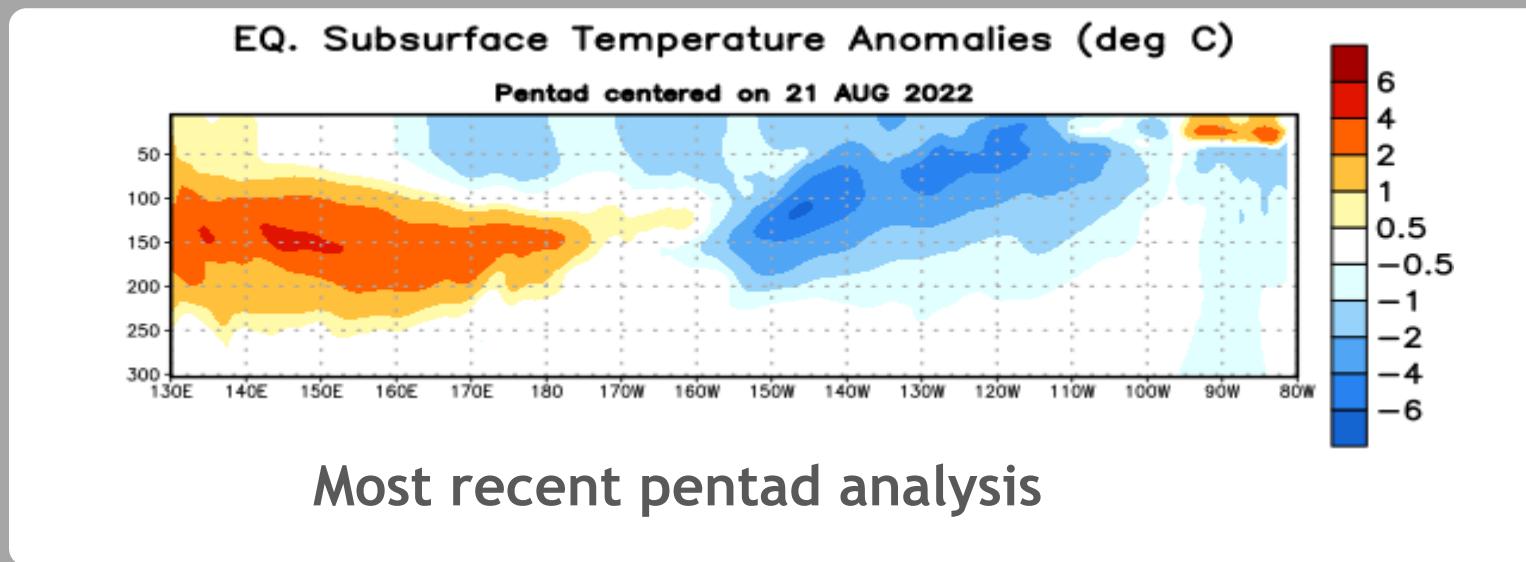
# Central and Eastern Pacific Upper-Ocean (0-300 m) Weekly Average Temperature Anomalies

Until mid-January 2022, negative subsurface temperature anomalies were observed. During February 2022 through mid-March, subsurface temperature anomalies decreased and were negative. From mid-March to mid-June, subsurface temperature anomalies increased from negative to positive. Since mid-June, anomalies have decreased and are negative.

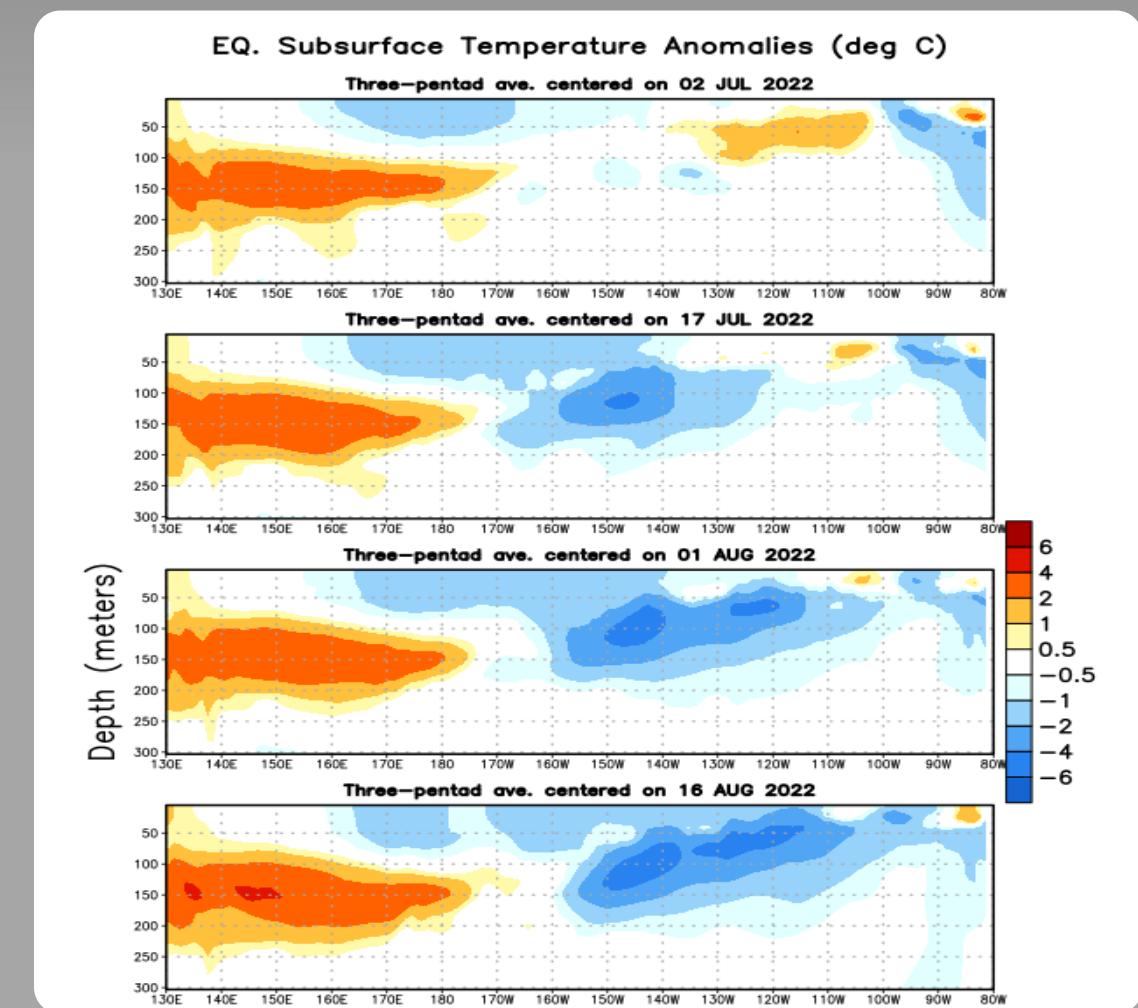


# Sub-Surface Temperature Departures in the Equatorial Pacific

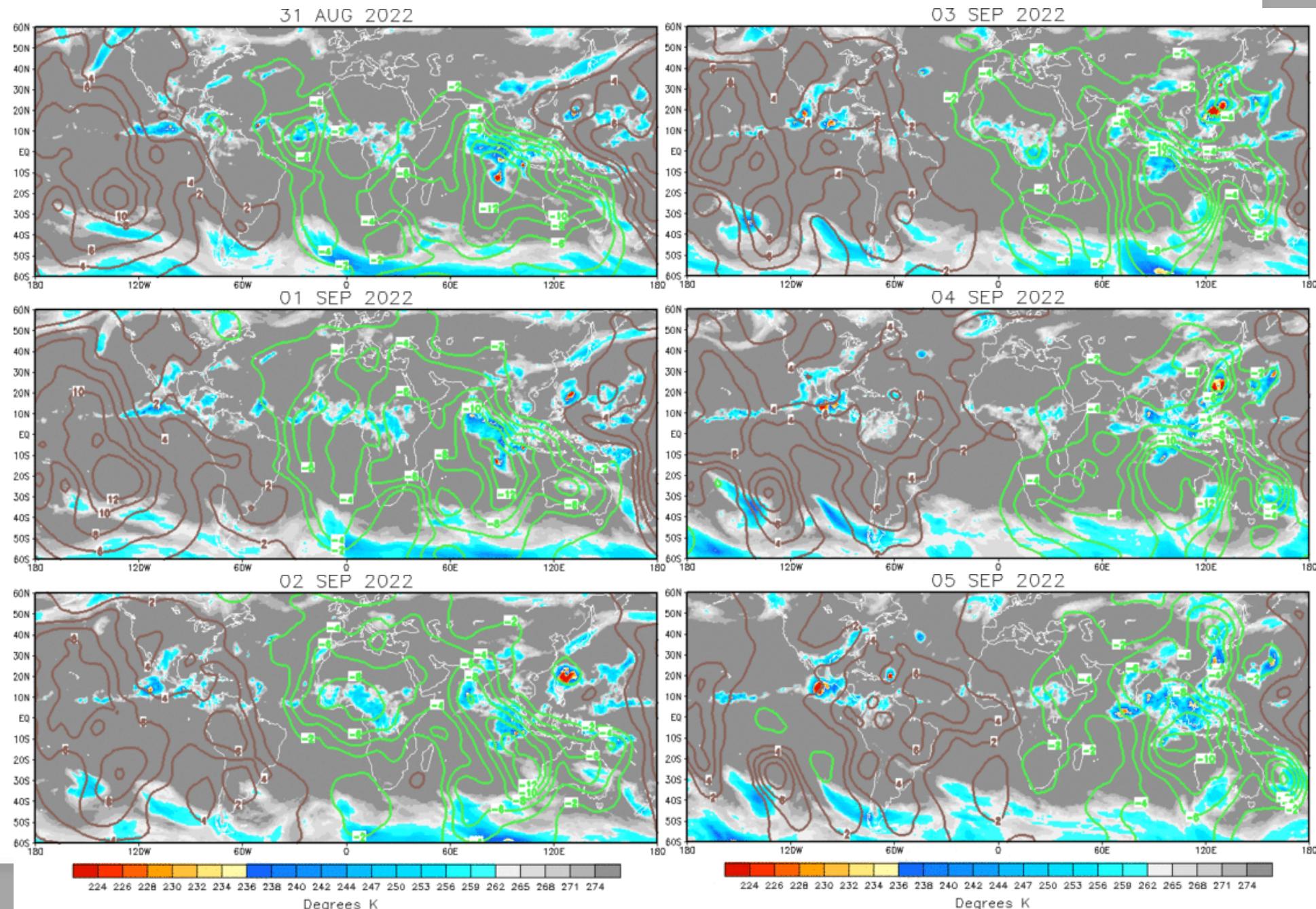
During the last two months, negative subsurface temperature anomalies reemerged at depth in the east-central Pacific Ocean, and extended to the surface.



Positive subsurface temperature anomalies have persisted, at depth, in the western Pacific Ocean.



# 6-Days Infra-Red (IR) 200hpa and Velocity Potential Anomaly



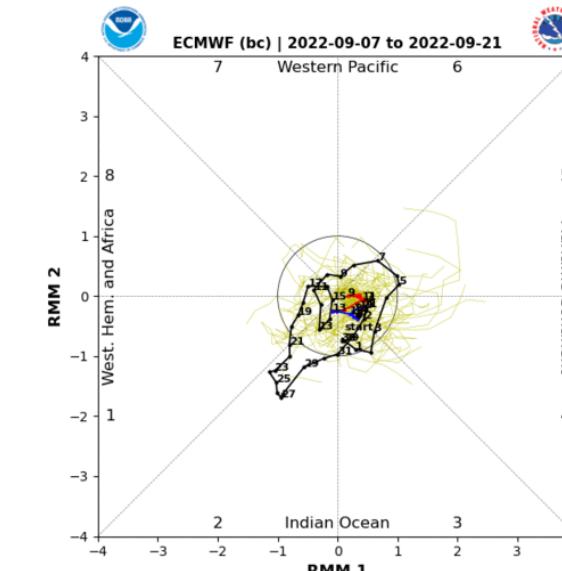
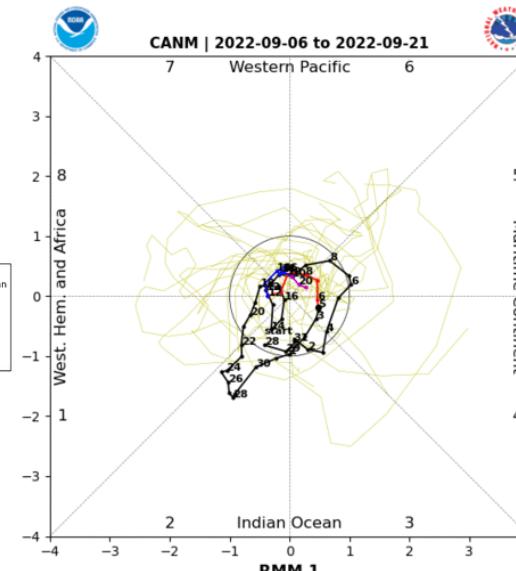
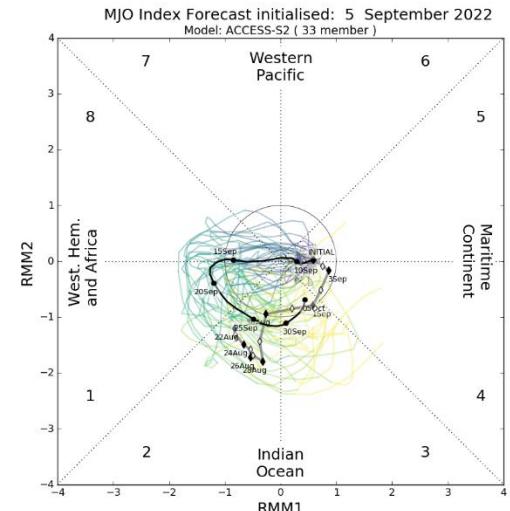
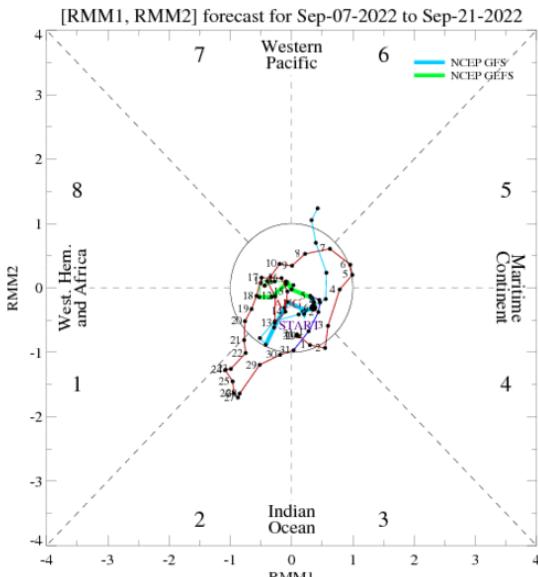
**Figure 12:** IR image and Velocity Potential anomalies

[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_6.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_6.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_5.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_5.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_4.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_4.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_3.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_3.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_2.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_2.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am\\_ir\\_monthly\\_1.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/vpotgifs/am_ir_monthly_1.gif)

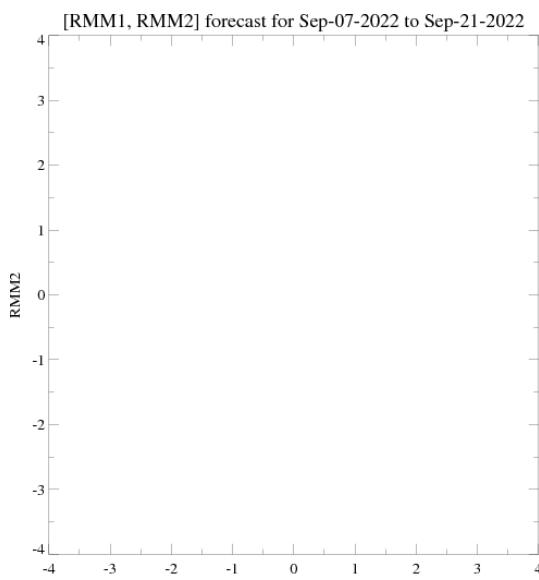
# MJO – Current Status and Forecast

Add BoM, UKMet and DWD

## Ensemble GFS Phase Diagram



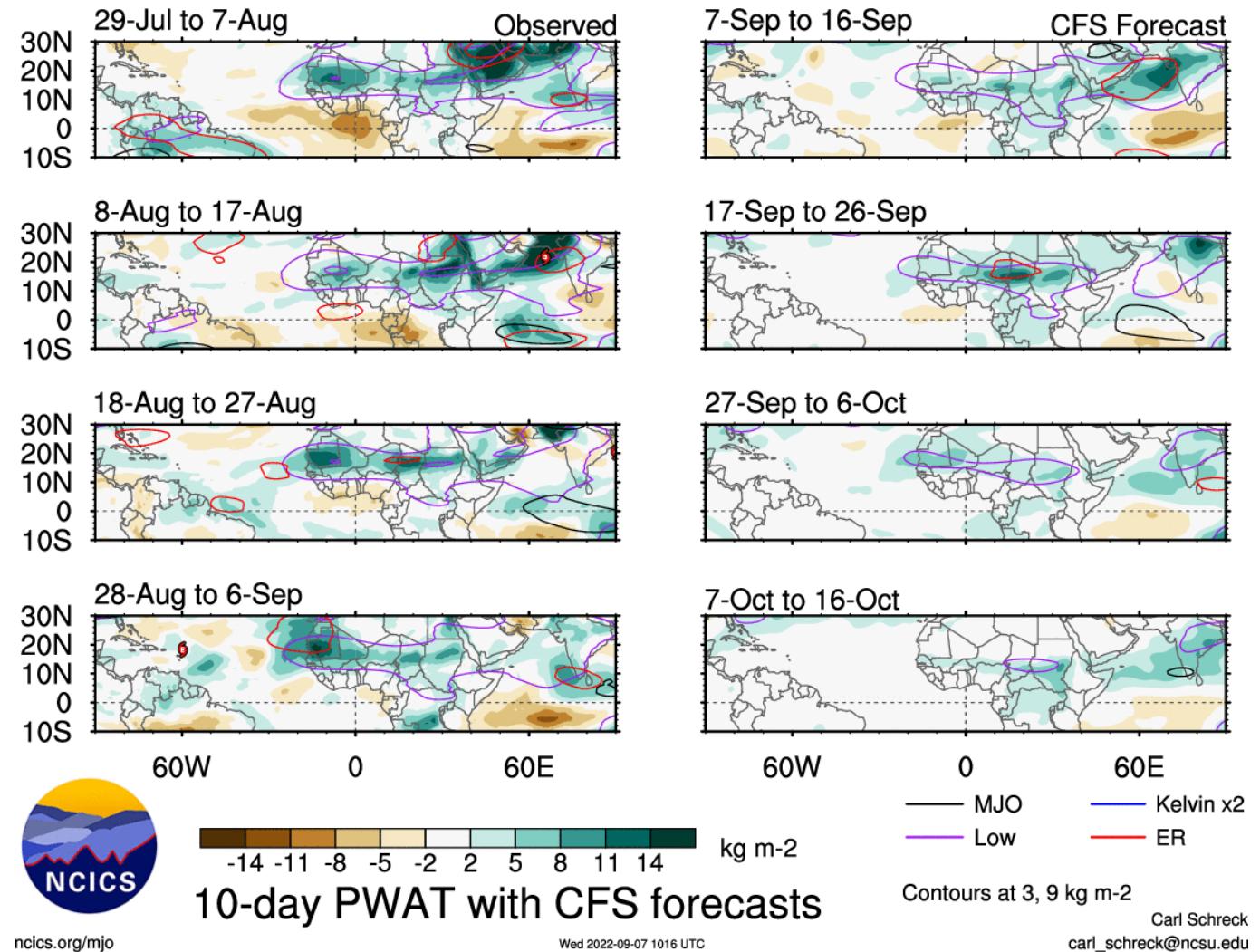
## Operational CFSv2 Phase Diagram



**Figure 14: MJO RMM Forecasts from ECMWF, NCEP and UK Met Office, JMA**

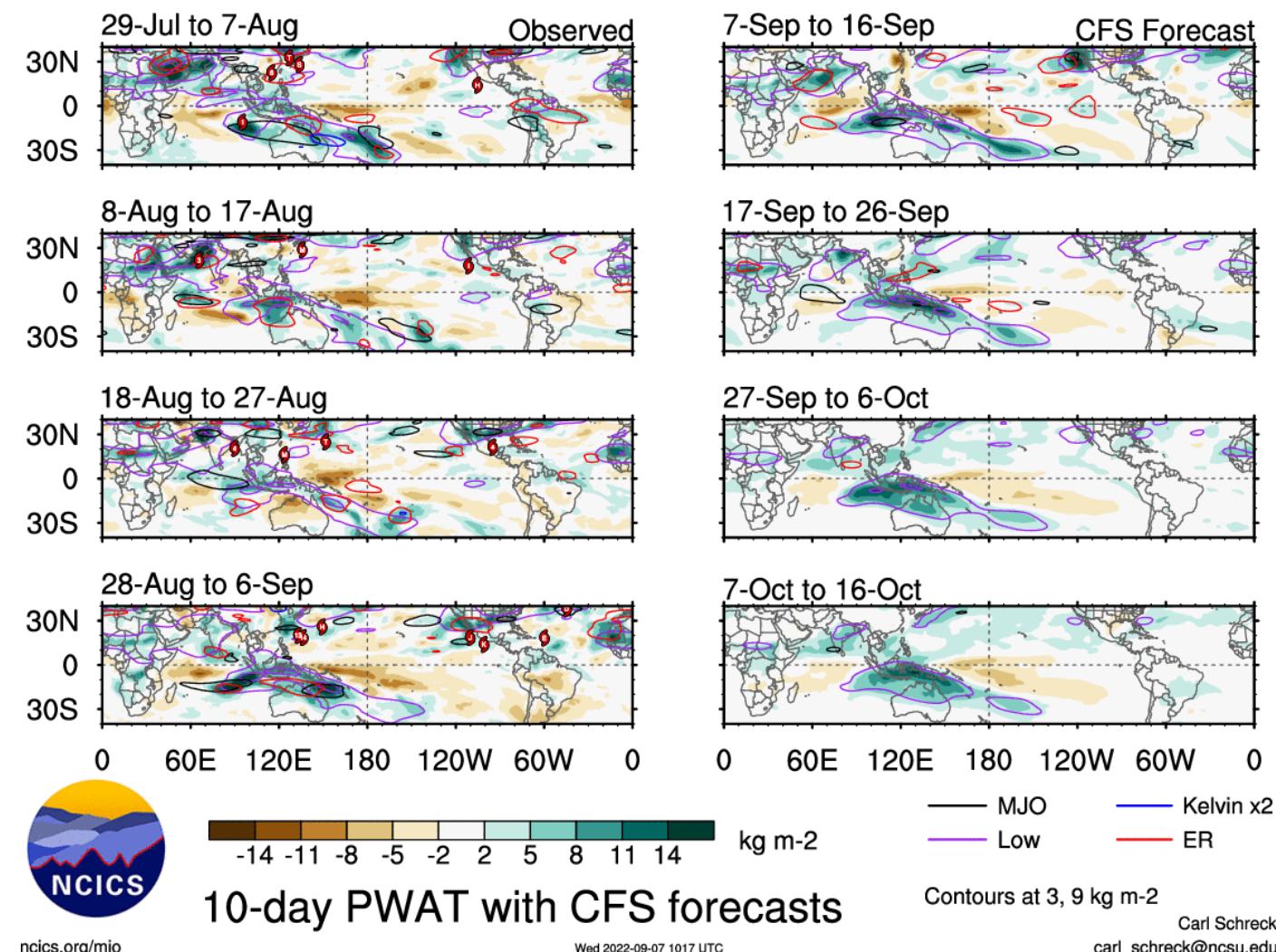
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/clivar\\_wh.shtml](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/clivar_wh.shtml)  
<https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/mjo.shtml>  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/CANM\\_phase\\_20m\\_small.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/CANM_phase_20m_small.gif)  
[https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/combphase\\_noCFSsmall.gif](https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/combphase_noCFSsmall.gif)  
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# Dekadal Precipitable Water (PWAT) Anomalies – Obs. and Fcst



**Figure 7a: Africa**

**Figure 17: Past four week Precipitable Water and Outlooks**



**Figure 7b: Global**

<https://ncics.org/pub/mjo/v2/map/pwat.cfs.all.africa.10.png>  
<https://ncics.org/pub/mjo/v2/map/pwat.cfs.all.global.10.png>

# Dekadal Velocity Potential Anomalies – Obs and Fcst

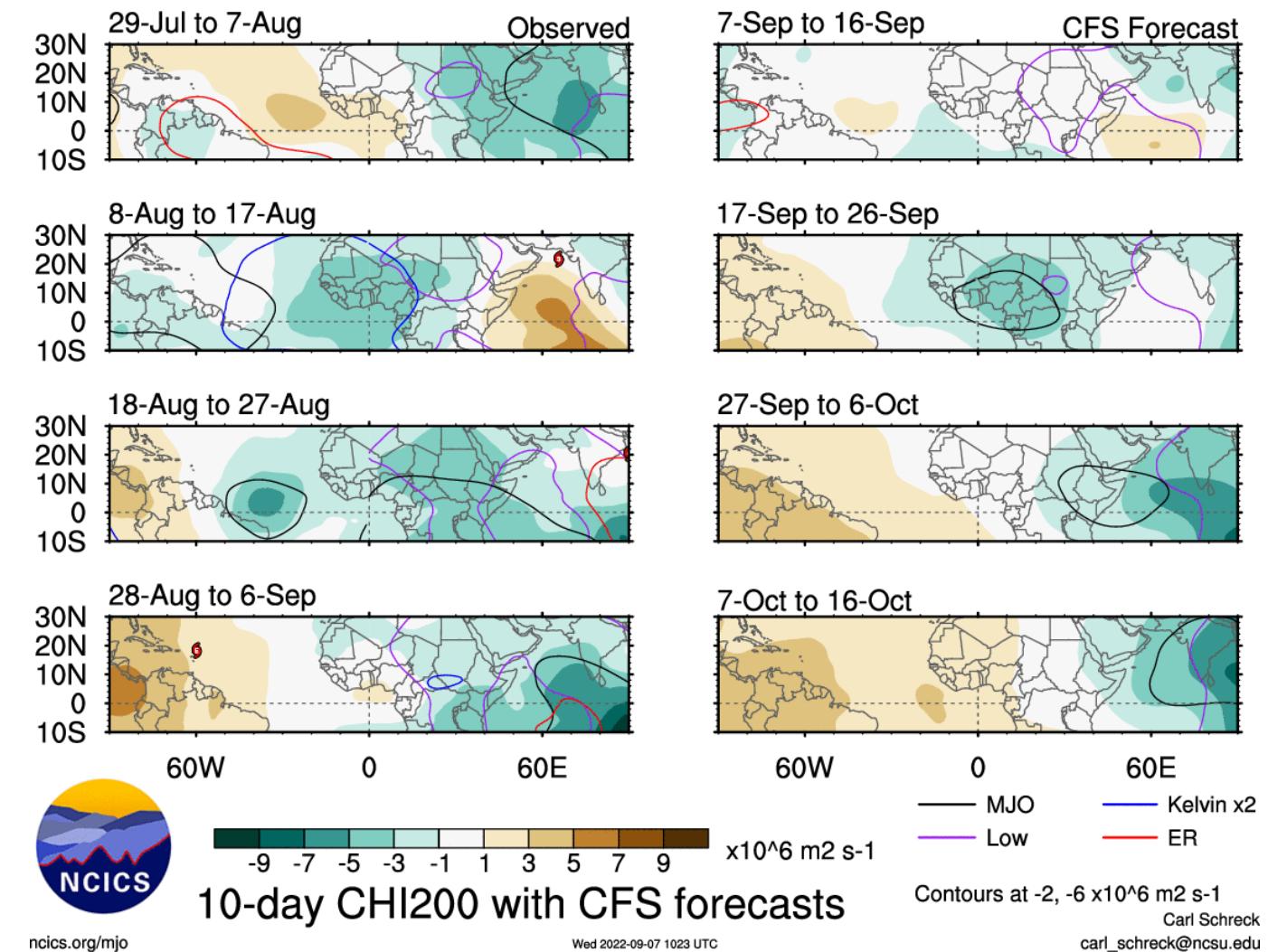
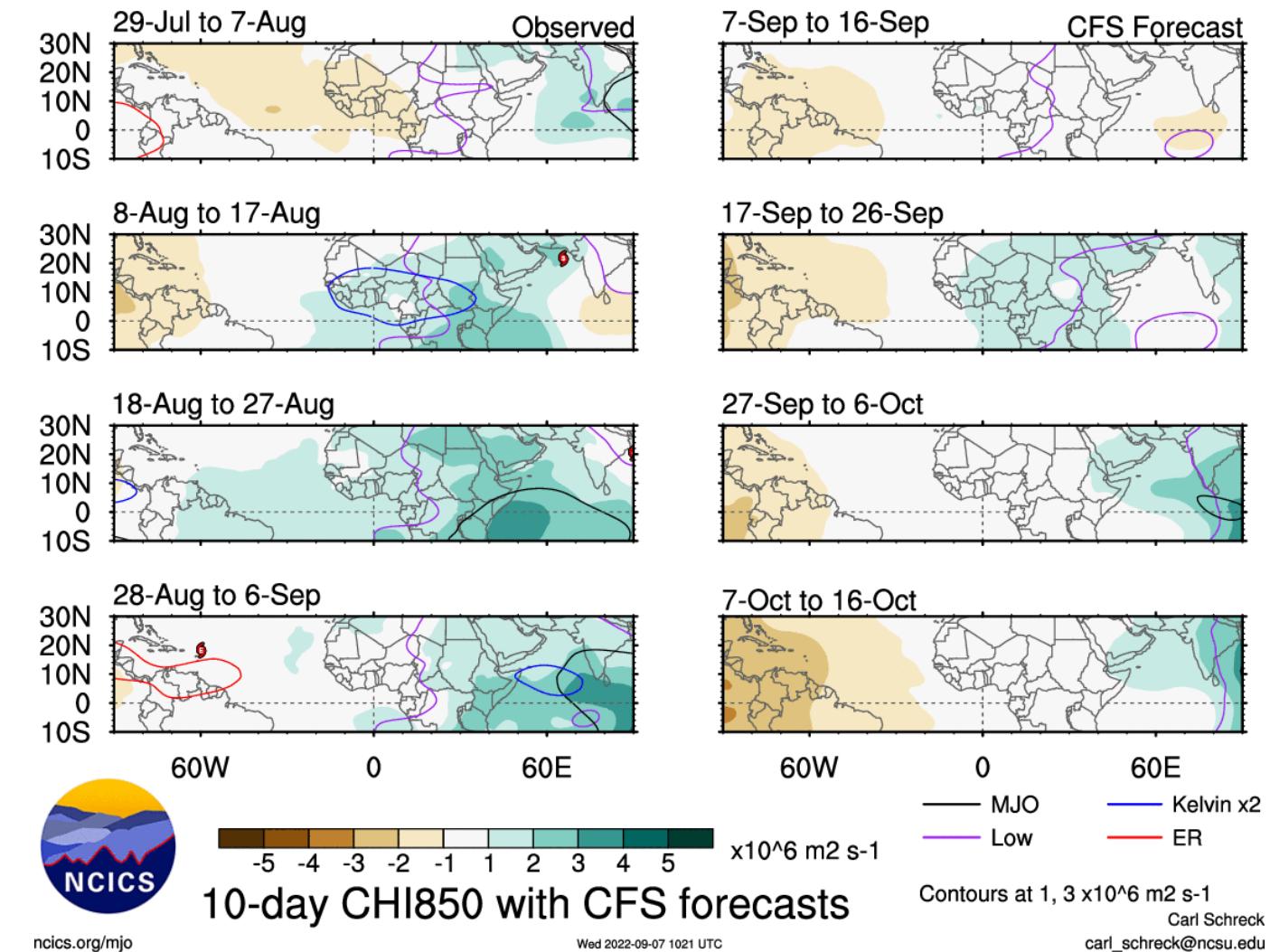
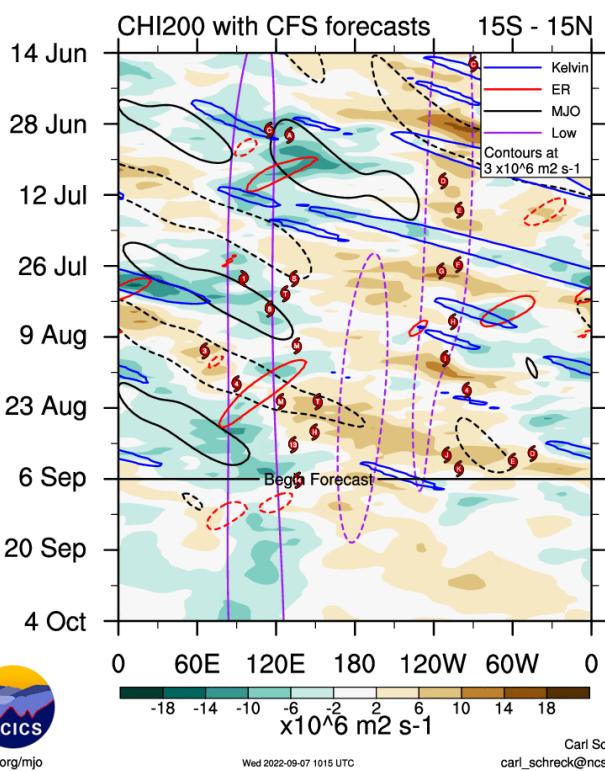
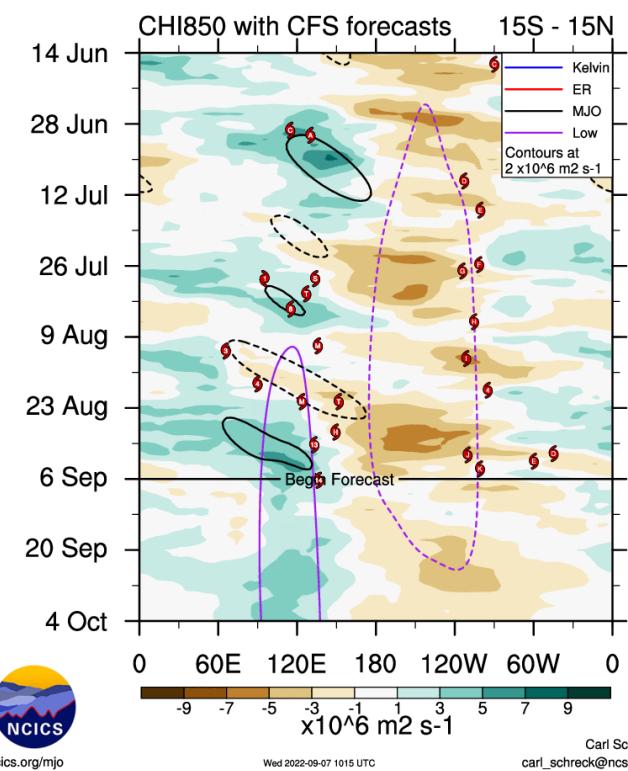


Figure 18a and b: Past four week and month velocity potential

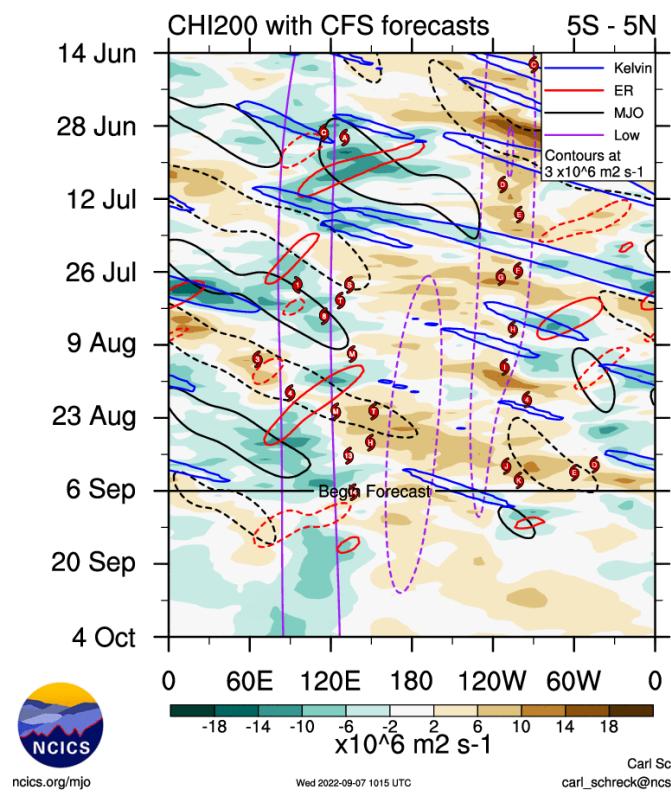
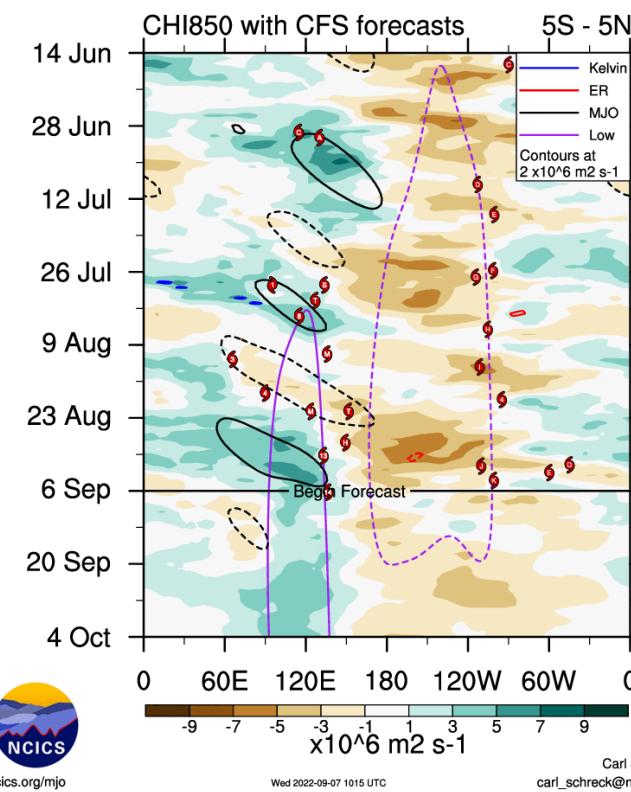
<https://ncics.org/pub/mjo/v2/map/chi850.cfs.all.global.10.png>  
<https://ncics.org/pub/mjo/v2/map/chi200.cfs.all.global.10.png>  
<https://ncics.org/pub/mjo/v2/map/chi850.cfs.all.africa.10.png>  
<https://ncics.org/pub/mjo/v2/map/chi200.cfs.all.africa.10.png>

# Dekadal Velocity Potential Anomalies – Obs and Fcst: Hovmoller diagram

Average Anomalies in the band 15S-15N



Average Anomalies in the band 5S-5N



<https://ncics.org/pub/mjo/v2/hov/chi850.cfs.wide.png>  
<https://ncics.org/pub/mjo/v2/hov/chi200.cfs.wide.png>  
<https://ncics.org/pub/mjo/v2/hov/chi850.cfs.eqtr.png>  
<https://ncics.org/pub/mjo/v2/hov/chi200.cfs.eqtr.png>

# Dekadal Stream Function Anomalies – Obs. and Fcst

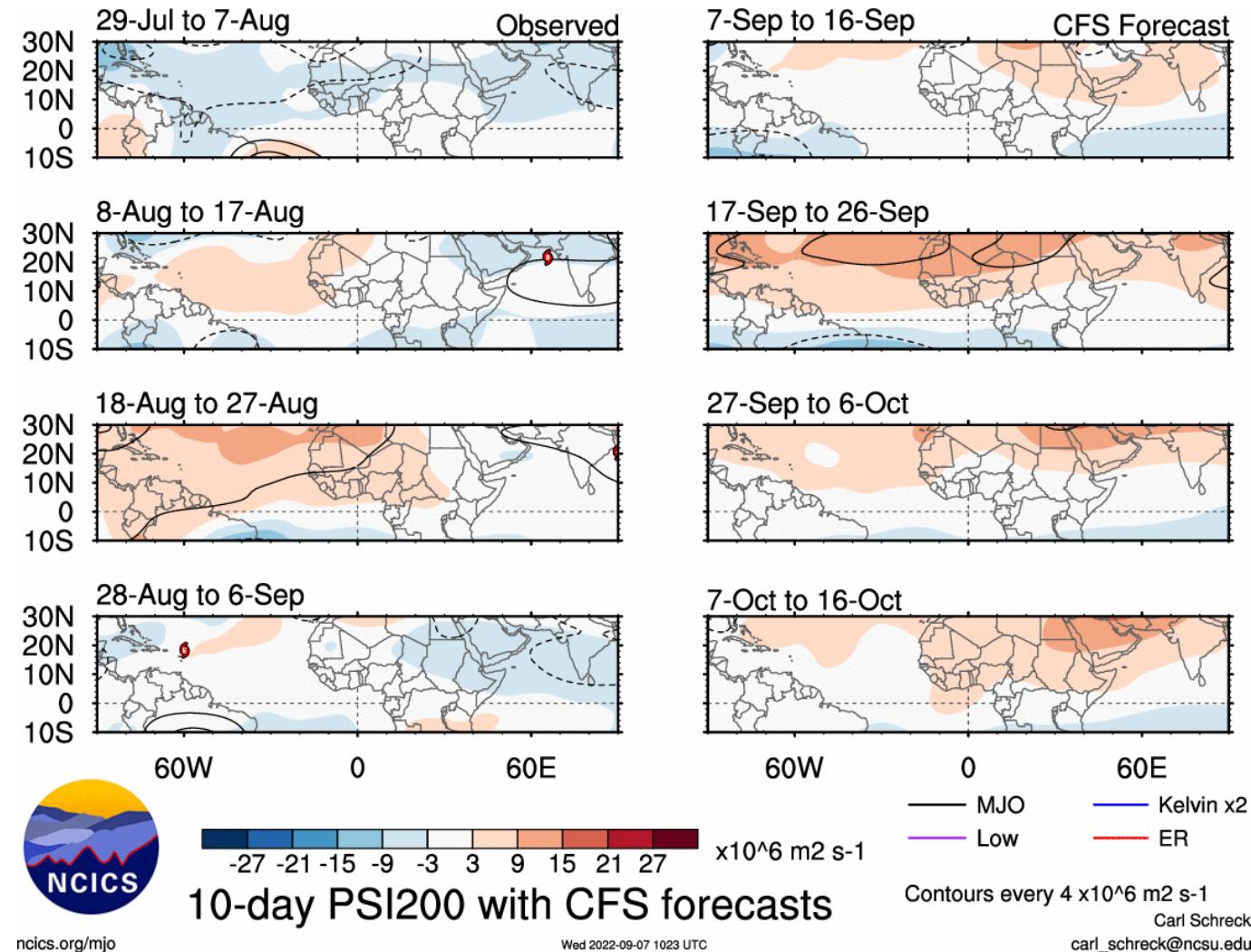
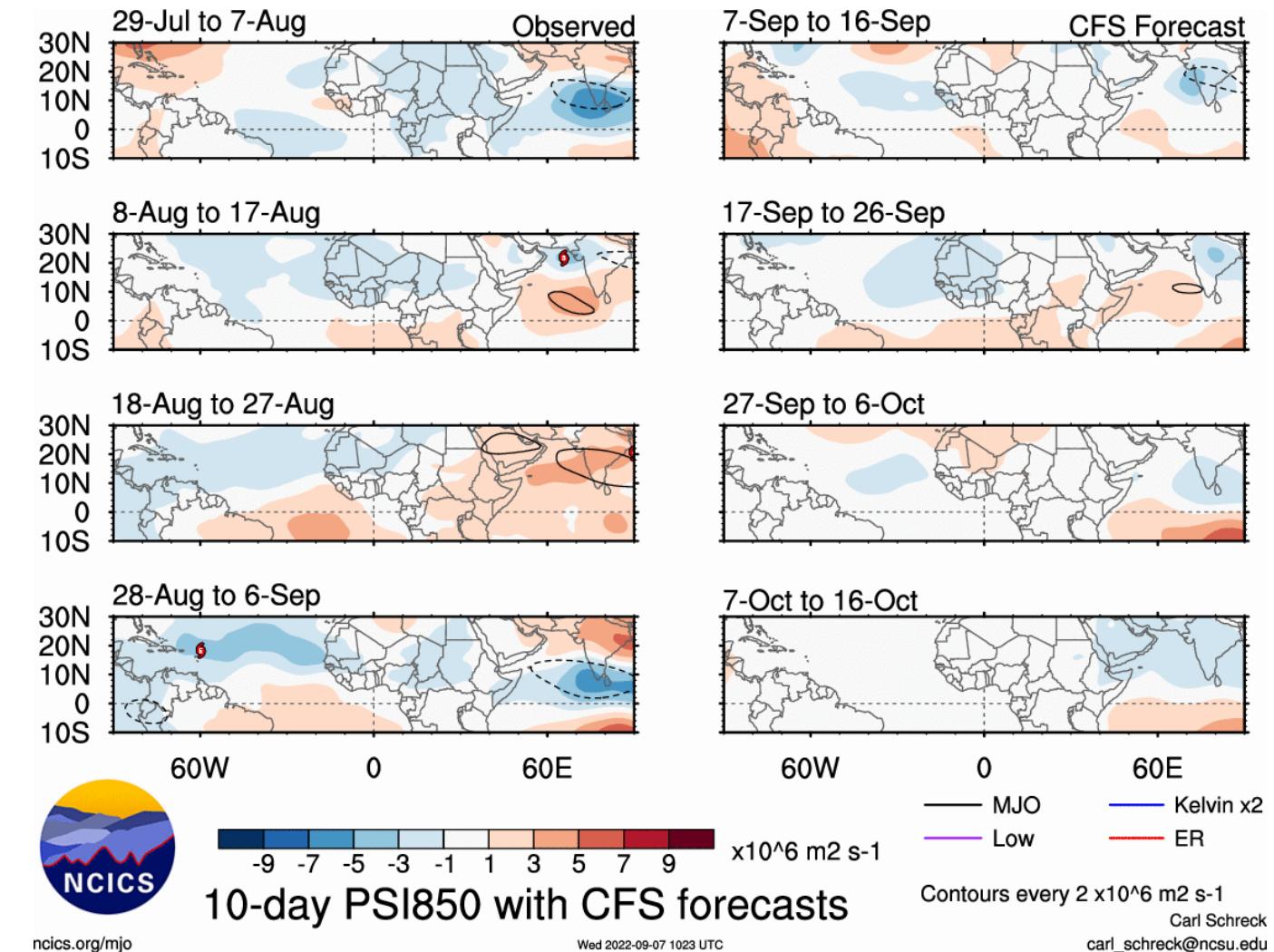


Figure 18a and b: Past four week and month velocity potential

<https://ncics.org/pub/mjo/v2/map/psi850.cfs.all.global.10.png>  
<https://ncics.org/pub/mjo/v2/map/psi200.cfs.all.global.10.png>  
<https://ncics.org/pub/mjo/v2/map/psi850.cfs.all.africa.10.png>  
<https://ncics.org/pub/mjo/v2/map/psi200.cfs.all.africa.10.png>

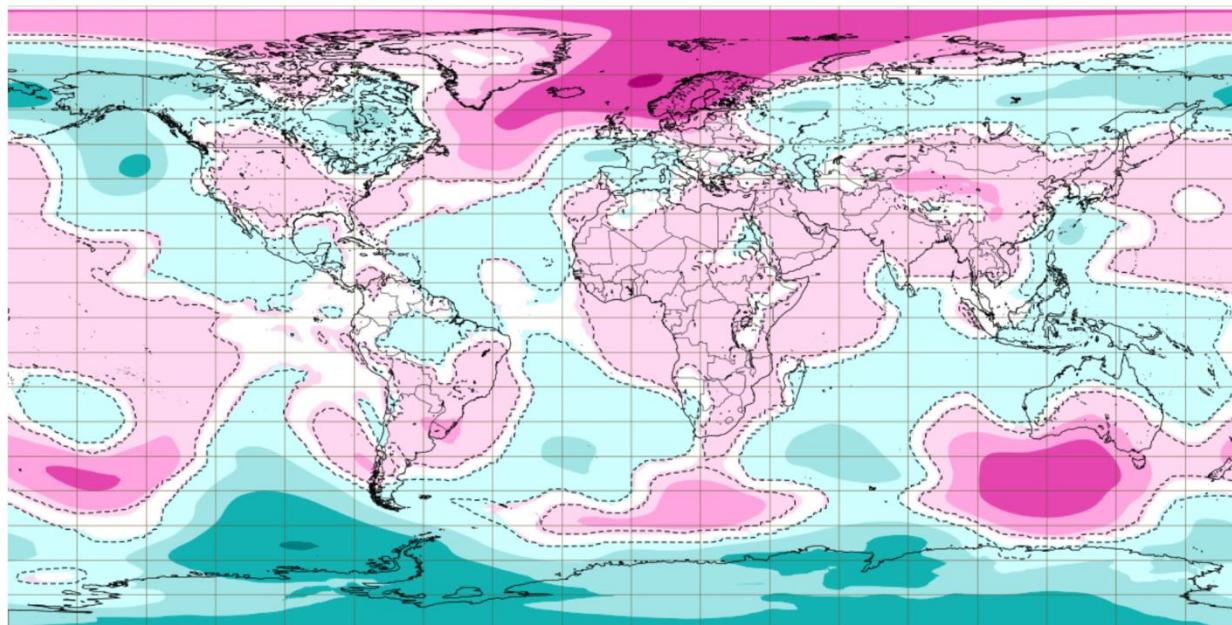
1. Climate Monitoring
2. Status of Drivers
- 3. Dynamical Model Forecast : Week 1 and 2**
4. Week 1 and 2 Outlook

# Mean Sea Level Pressure (MSLP) Forecast – Week 1 and 2

Add plot for GFS. BoM. ECMWF. UKMet and DWD

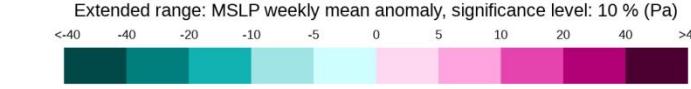
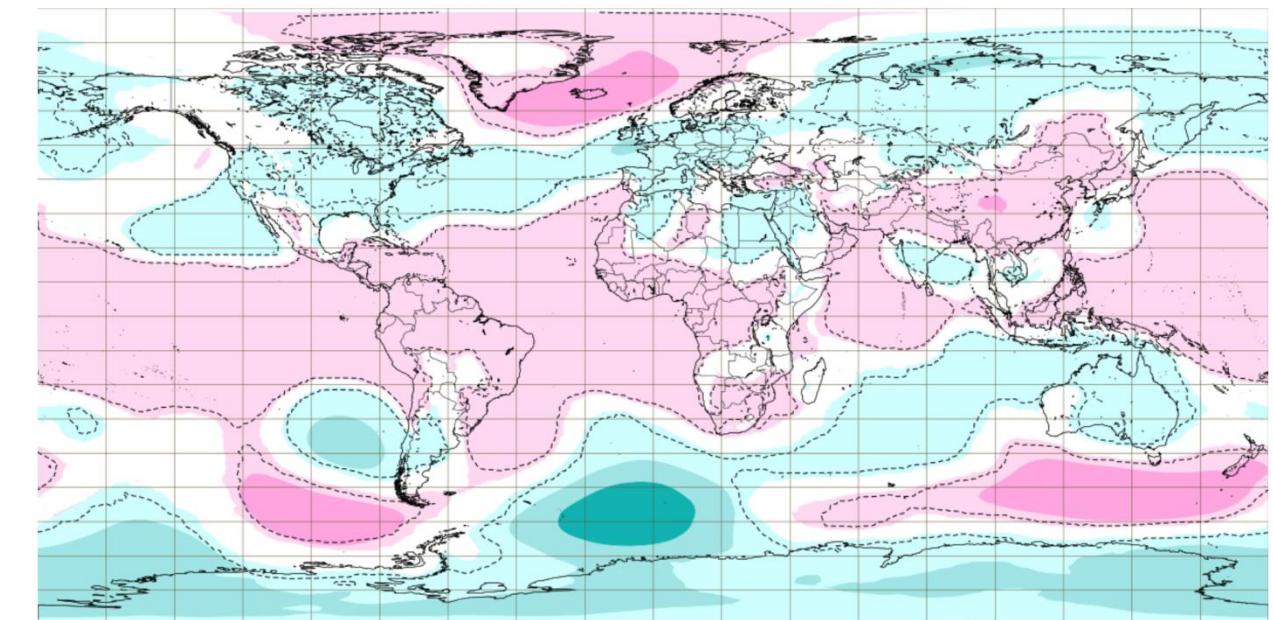
Mean sea level pressure: Weekly mean anomalies

Base time: Mon 29 Aug 2022 Valid time: Mon 29 Aug 2022 - Mon 05 Sep 2022 (+168h) Area : Global



Mean sea level pressure: Weekly mean anomalies

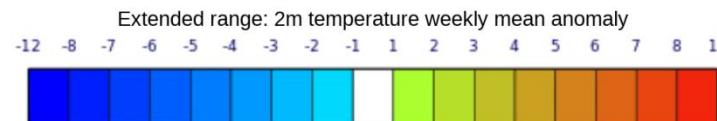
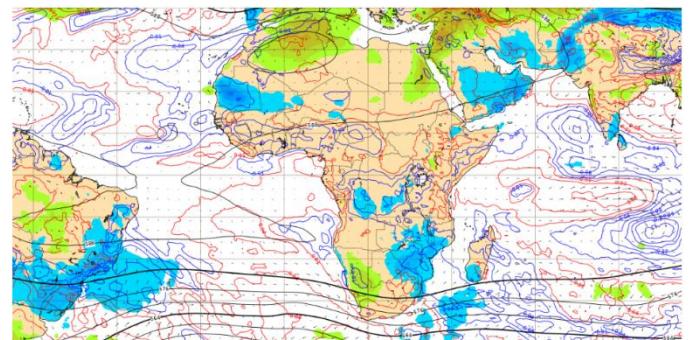
Base time: Mon 29 Aug 2022 Valid time: Mon 05 Sep 2022 - Mon 12 Sep 2022 (+336h) Area : Global



# Subseasonal Drivers Forecast – Week 1 and 2

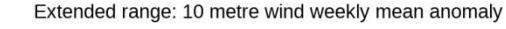
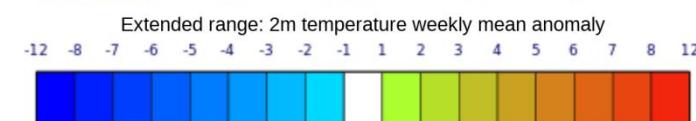
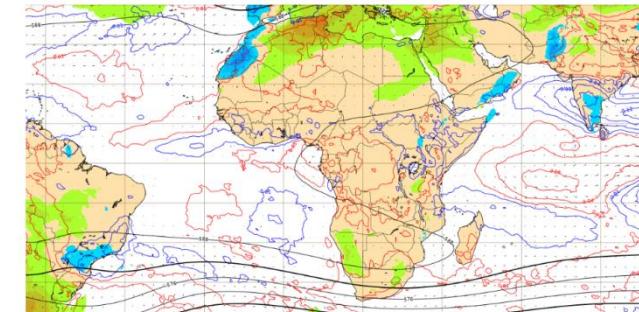
## Multiparam: Weekly mean anomalies

Base time: Mon 29 Aug 2022 Valid time: Mon 29 Aug 2022 - Mon 05 Sep 2022 (+168h) Area : Africa



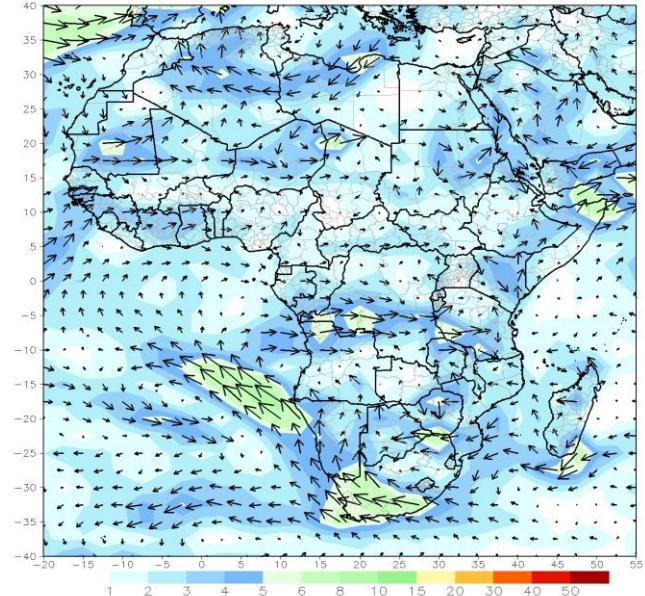
## Multiparam: Weekly mean anomalies

Base time: Mon 29 Aug 2022 Valid time: Mon 05 Sep 2022 - Mon 12 Sep 2022 (+336h) Area : Africa

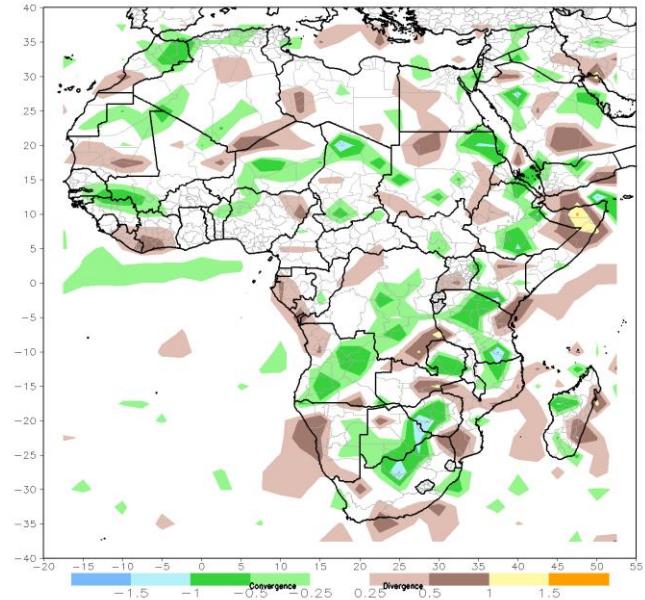


# Wind Anomalies and divergence Forecast @ 925, 850, 700, 200 hPa - Week1

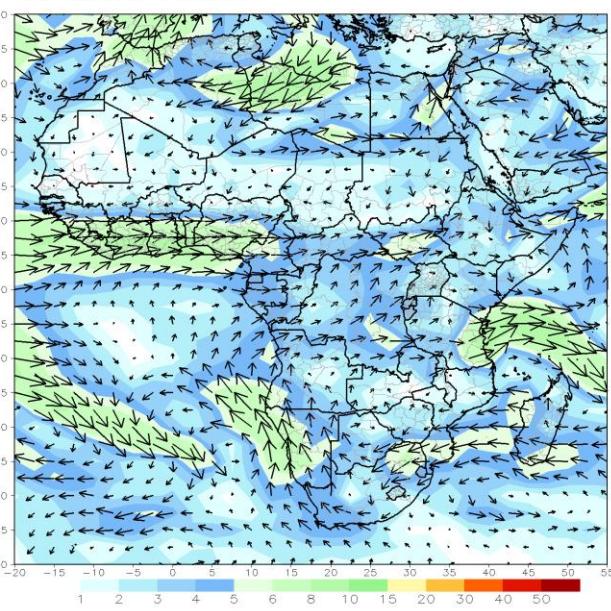
GFS 850mb week1 Mean Vector Wind Anomaly (m/s)  
Period: 06z08Sep2022 – 06z14Sep2022



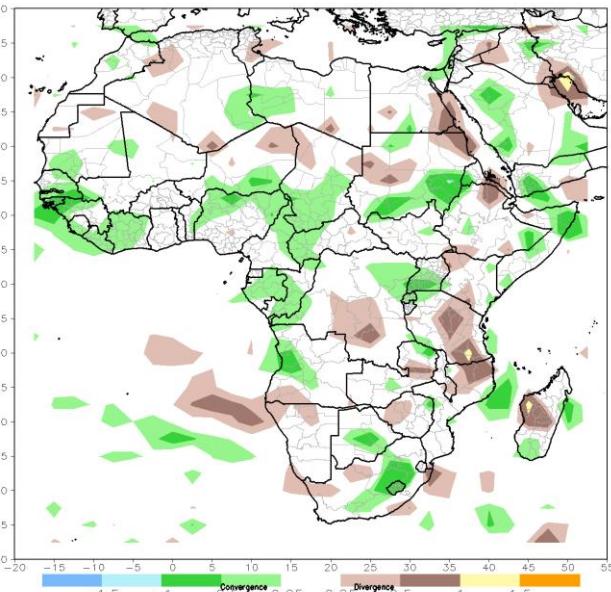
GFS 850mb week1 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z08Sep2022 – 06z14Sep2022



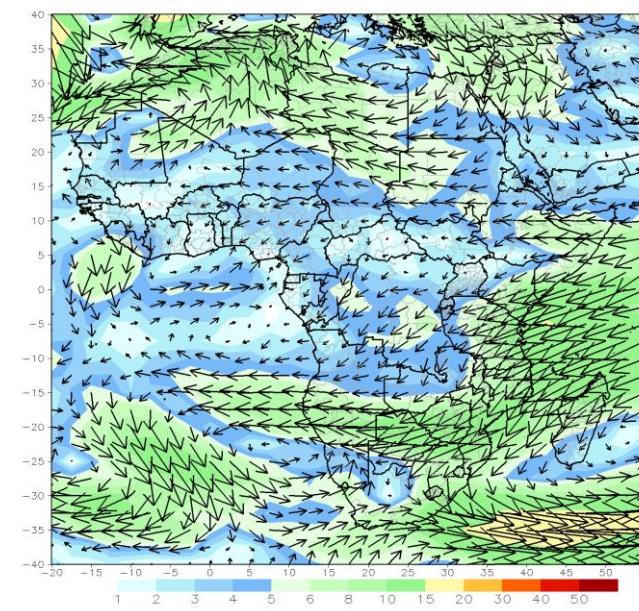
GFS 700mb week1 Mean Vector Wind Anomaly (m/s)  
Period: 06z08Sep2022 – 06z14Sep2022



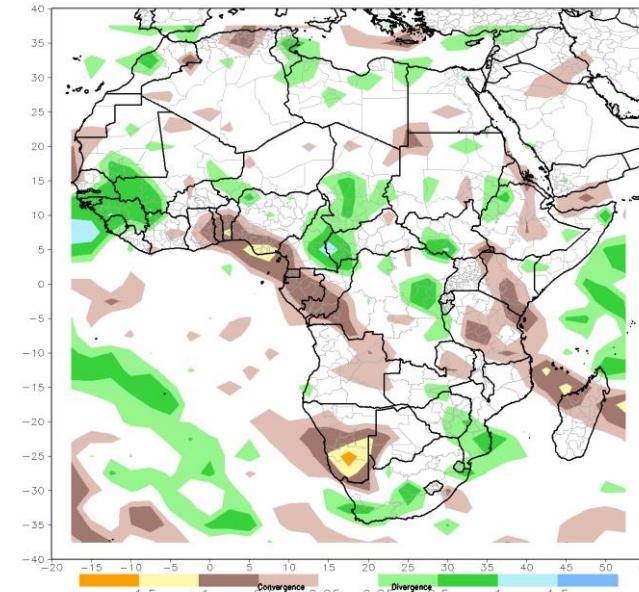
GFS 700mb week1 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z08Sep2022 – 06z14Sep2022



GFS 200mb week1 Mean Vector Wind Anomaly (m/s)  
Period: 06z08Sep2022 – 06z14Sep2022



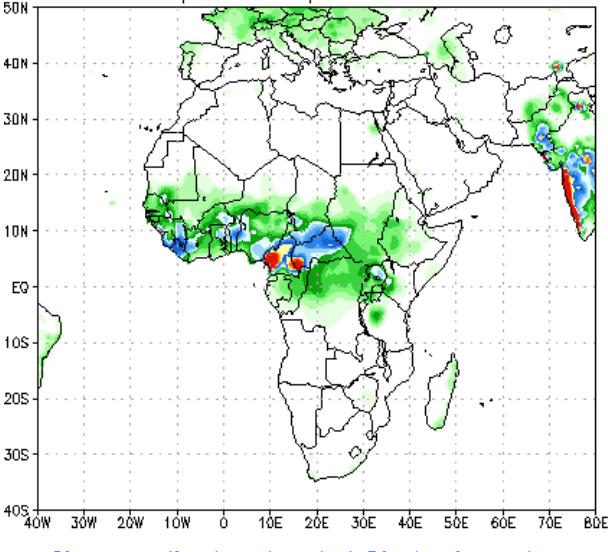
GFS 200mb week1 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z08Sep2022 – 06z14Sep2022



# NCEP/GFS Bias-Corrected Precipitation Ensemble Forecast - Week 1

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 06Sep2022

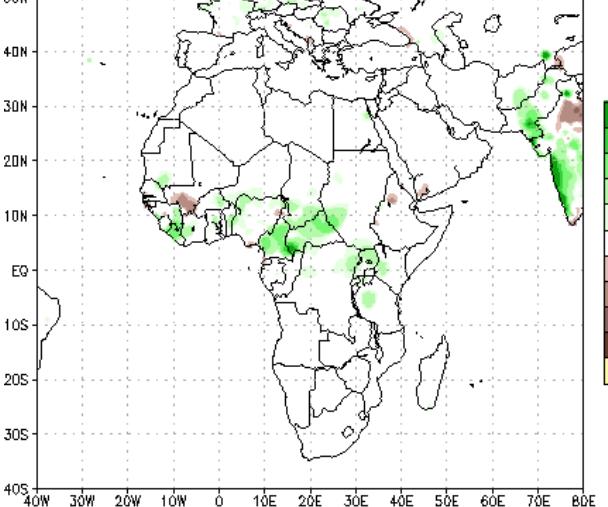
06Sep2022–12Sep2022 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 06Sep2022

06Sep2022–12Sep2022 Anomaly

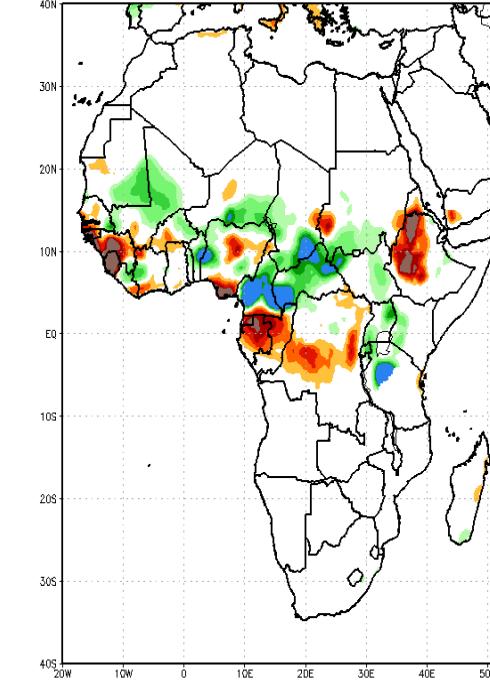


Bias correction based on last 30-day forecast error

CPC Unified Precip Climatology (1991–2020)

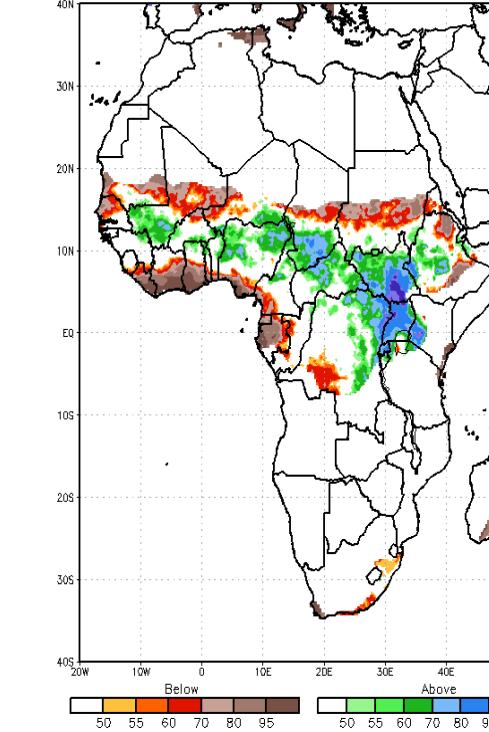
GFS

Week 1 Forecast (Valid: September 08, 2022 – September 14, 2022)  
Anomaly in mm (bias corrected)



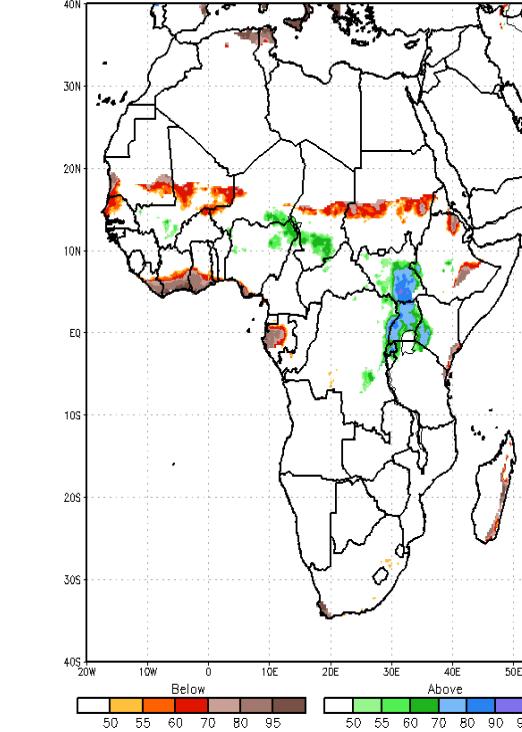
GFS

Week 1 Forecast (Valid: September 08, 2022 – September 14, 2022)  
Wet(>120%) and Dry(<80%) Probability



GFS

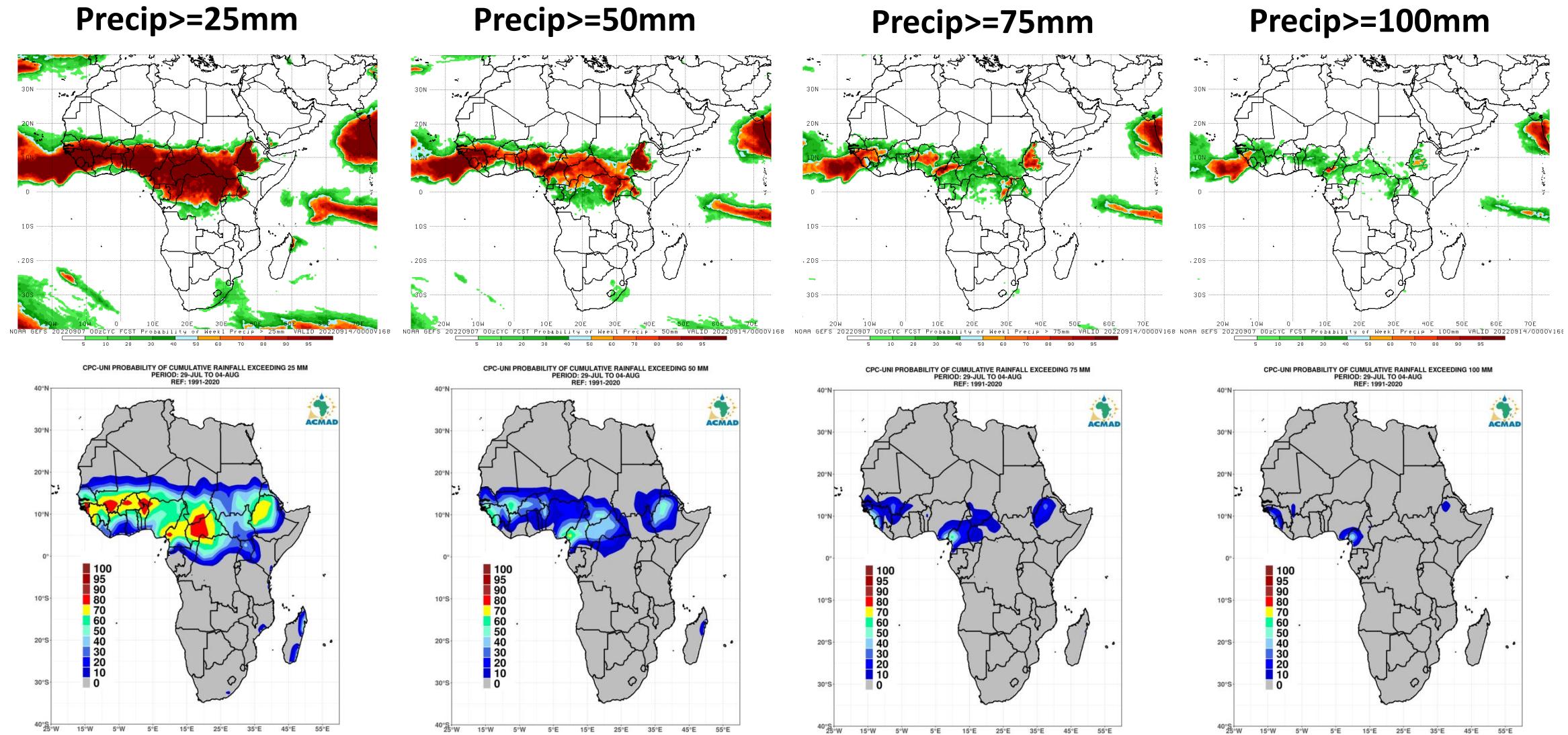
Week 1 Forecast (Valid: September 08, 2022 – September 14, 2022)  
Wet(>150%) and Dry(<50%) Probability



[https://www.cpc.ncep.noaa.gov/products/Precip\\_Monitoring/Figures/GFS/AF\\_curr.p.gfs1a.gif](https://www.cpc.ncep.noaa.gov/products/Precip_Monitoring/Figures/GFS/AF_curr.p.gfs1a.gif)  
[https://www.cpc.ncep.noaa.gov/products/Precip\\_Monitoring/Figures/GFS/AF\\_curr.p.gfs1b.gif](https://www.cpc.ncep.noaa.gov/products/Precip_Monitoring/Figures/GFS/AF_curr.p.gfs1b.gif)  
[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk1\\_bc\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk1_bc_precip.png)  
[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk1\\_wdm\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk1_wdm_precip.png)  
[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk1\\_wde\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk1_wde_precip.png)

Figure 26: NCEP/GFS Précipitation and Anomaly forecast.

**Week-1 Precipitation  
Probability of Exceedance:  
Forecast and Climo**



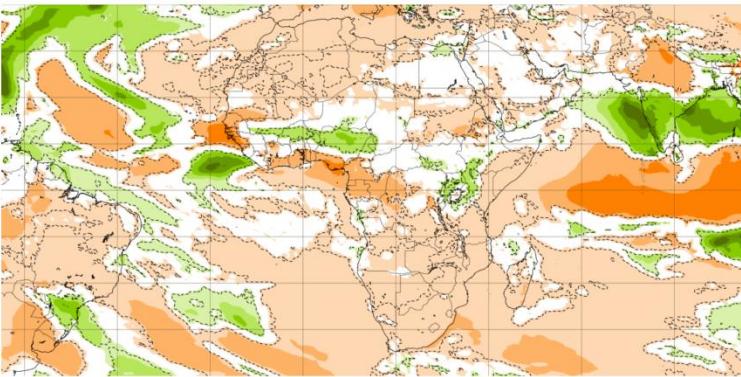
**Figure 27: Week1 Precipitation Total Exceedance Probabilities**

[https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs\\_wk1\\_precip25mm\\_prob\\_africa.html](https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs_wk1_precip25mm_prob_africa.html)  
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[https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs\\_wk1\\_precip100mm\\_prob\\_africa.html](https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs_wk1_precip100mm_prob_africa.html)  
[http://154.66.220.45:8080/thredds/catalog/ACMAD/CDD/climatemonitoringservice/Probability\\_of\\_Exceedance/Weekly/Current/catalog.html](http://154.66.220.45:8080/thredds/catalog/ACMAD/CDD/climatemonitoringservice/Probability_of_Exceedance/Weekly/Current/catalog.html)

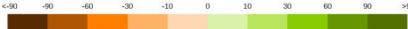
# Probability Precipitation Forecasts from ECMWF for week 1 : weekly tercile at below 33% and above 66%

Precipitation: Weekly mean anomalies

Base time: Mon 05 Sep 2022 Valid time: Mon 05 Sep 2022 - Mon 12 Sep 2022 (+168h) Area : Africa



Extended range: Precipitation weekly mean anomaly, significance level: 10 % (mm)

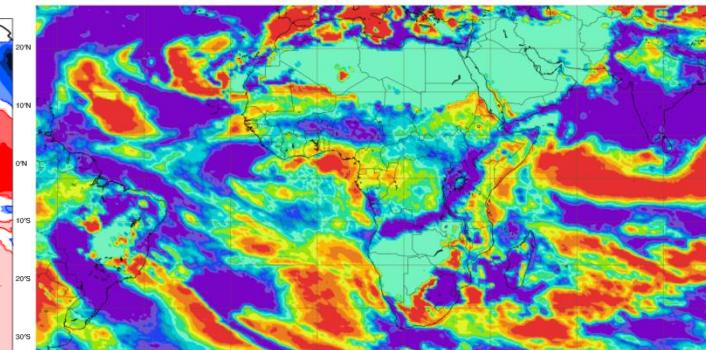


ECMWF EPS-Monthly Forecasting System  
Precipitation anomaly  
Forecast start reference is 05-09-2022  
ensemble size = 51 ,climate size = 660

Day 1-7  
05-09-2022/TO/11-09-2022  
Shaded areas <math>\pm</math> 1 standard deviation

Precipitation: Probability distribution

Base time: Mon 05 Sep 2022 Valid time: Mon 05 Sep 2022 - Mon 12 Sep 2022 (+168h) Distribution group : Lower Tercile  
Area : Africa

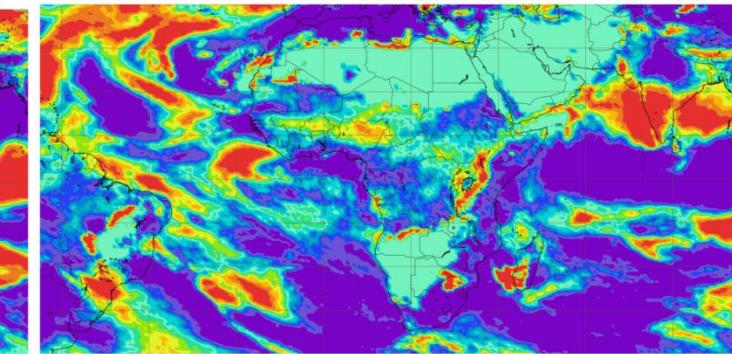


Extended range: precipitation probability dist. at quantile: Lower tercile (%)



Precipitation: Probability distribution

Base time: Mon 05 Sep 2022 Valid time: Mon 05 Sep 2022 - Mon 12 Sep 2022 (+168h) Distribution group : Upper tercile  
Area : Africa



Extended range: precipitation probability dist. at quantile: Upper tercile (%)



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Licence: CC-BY-4.0 and ECMWF Terms of Use(<https://apps.ecmwf.int/datasets/licences/general>)



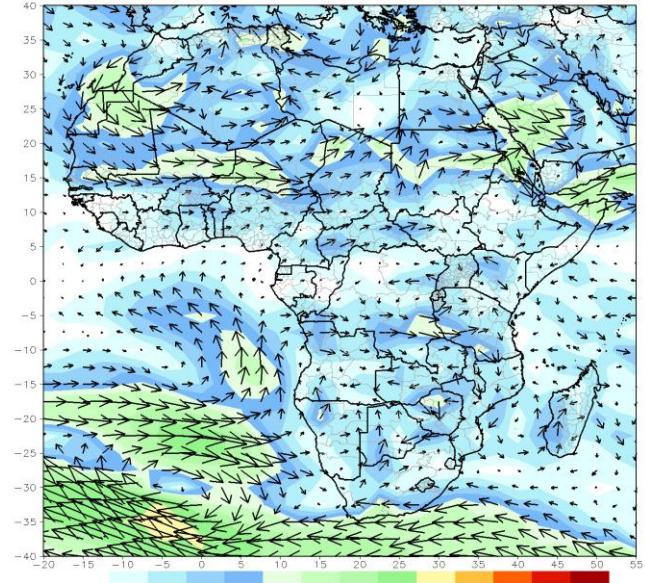
[https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc\\_multi\\_anomaly?facets=undefined&time=2019081500,408,2019090100&parameter=precipitation&area=Global](https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc_multi_anomaly?facets=undefined&time=2019081500,408,2019090100&parameter=precipitation&area=Global)

[https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc\\_multi\\_tercile?facets=undefined&time=2021110100,312,2021111400&parameter=precipitation&tercile=1&area=Africa](https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc_multi_tercile?facets=undefined&time=2021110100,312,2021111400&parameter=precipitation&tercile=1&area=Africa)

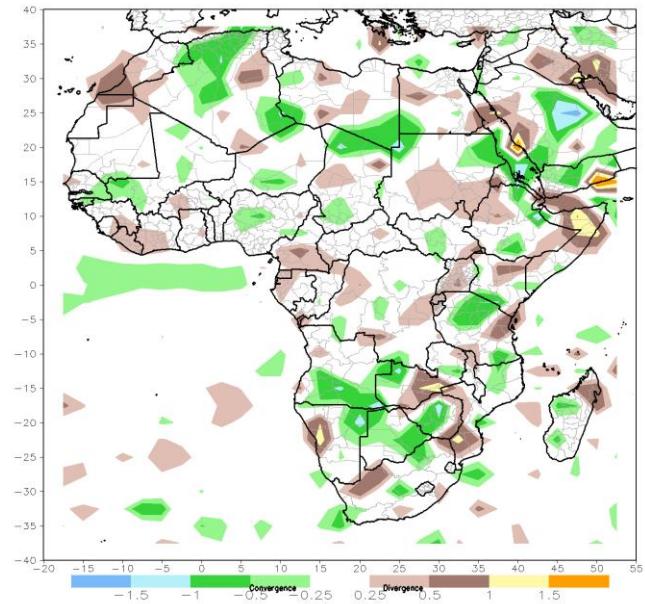
Figure 29: Weekly tercile probability forecast below 33%

# Wind Anomalies and divergence Forecast @ 925, 850, 700, 200 hPa – Week2

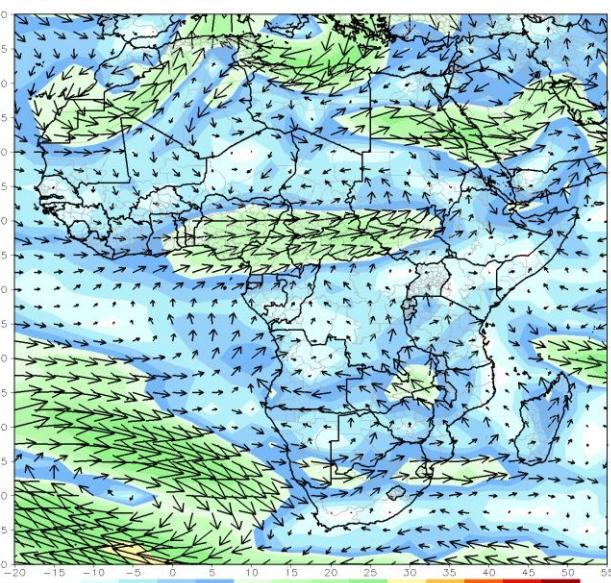
GFS 850mb week2 Mean Vector Wind Anomaly (m/s)  
Period: 06z15Sep2022 – 06z21Sep2022



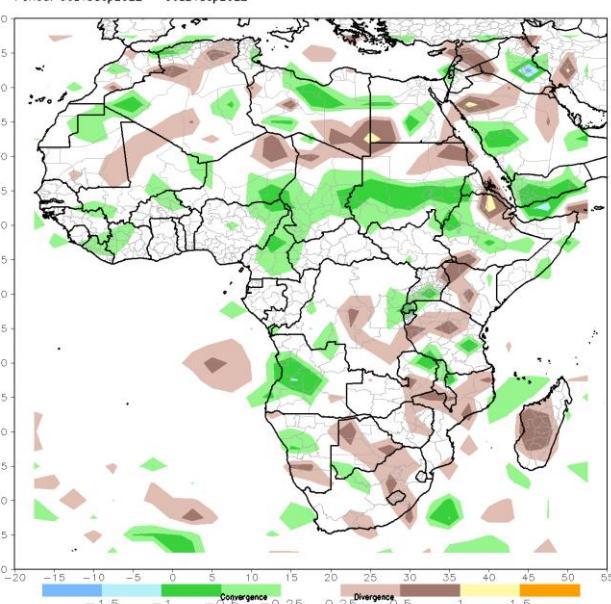
GFS 850mb week2 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z15Sep2022 – 06z21Sep2022



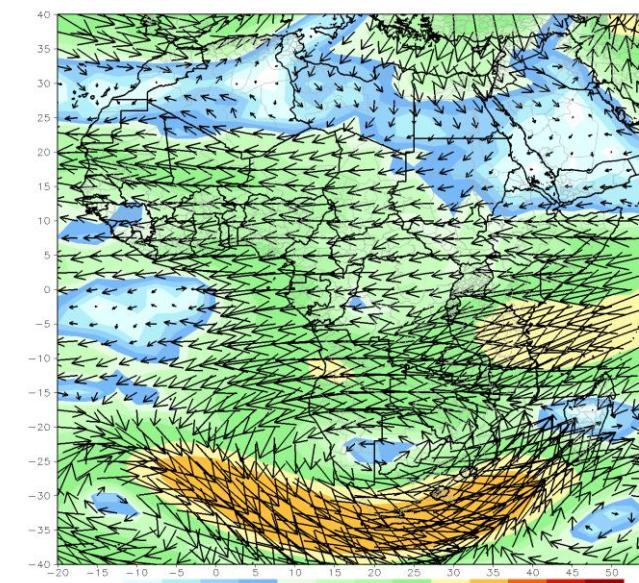
GFS 700mb week2 Mean Vector Wind Anomaly (m/s)  
Period: 06z15Sep2022 – 06z21Sep2022



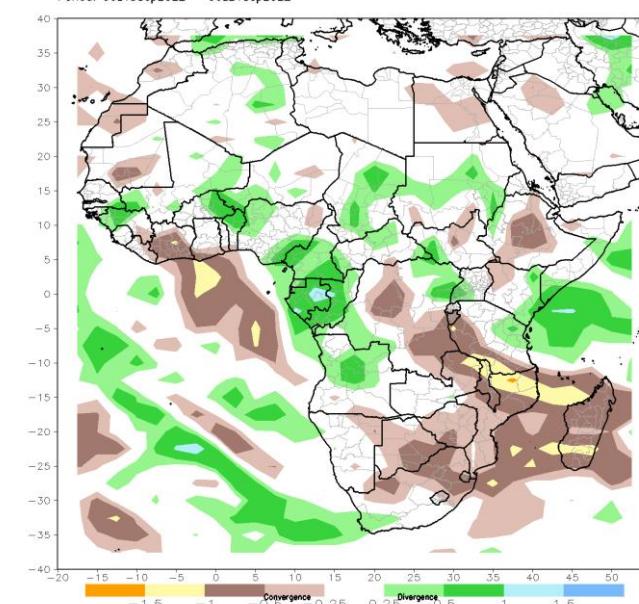
GFS 700mb week2 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z15Sep2022 – 06z21Sep2022



GFS 200mb week2 Mean Vector Wind Anomaly (m/s)  
Period: 06z15Sep2022 – 06z21Sep2022



GFS 200mb week2 Mean Divergence Anomaly ( $10e+5/s$ )  
Period: 06z15Sep2022 – 06z21Sep2022

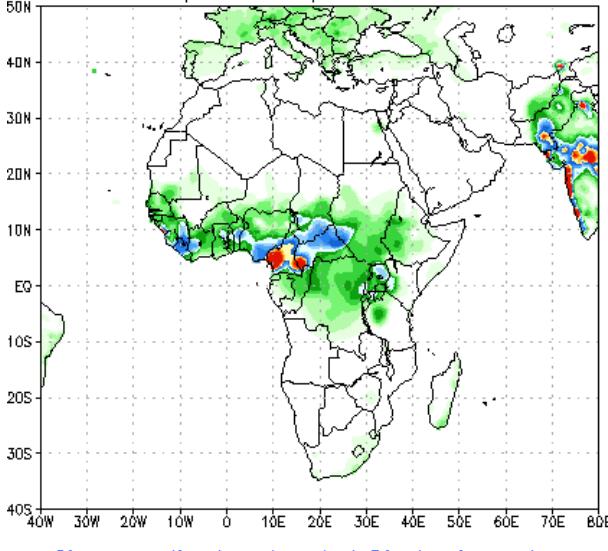


# NCEP/GFS Bias-Corrected Precipitation Ensemble Forecast - Week 2

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)

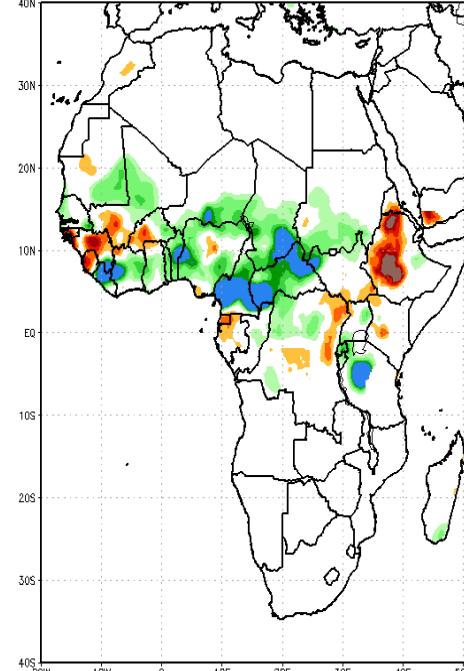
from: 06Sep2022

13Sep2022–19Sep2022 Accumulation



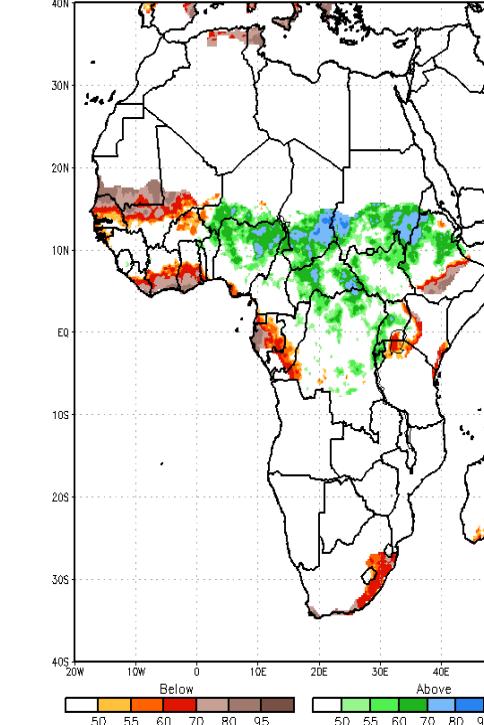
GFS Week 2 Forecast (Valid: September 15, 2022 – September 21, 2022)

Anomaly in mm (bias corrected)



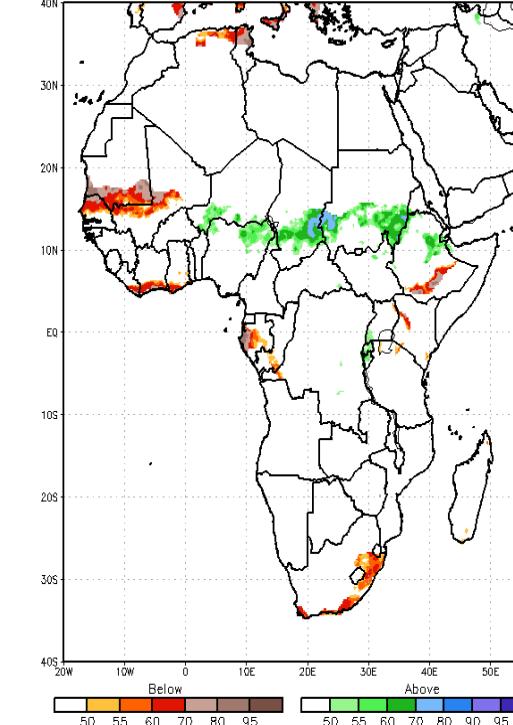
GFS Week 2 Forecast (Valid: September 15, 2022 – September 21, 2022)

Wet(>120%) and Dry(<80%) Probability



GFS Week 2 Forecast (Valid: September 15, 2022 – September 21, 2022)

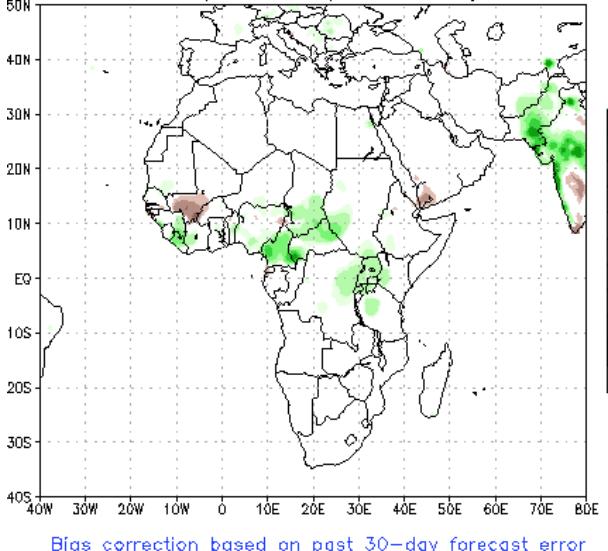
Wet(>150%) and Dry(<50%) Probability



NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)

from: 06Sep2022

13Sep2022–19Sep2022 Anomaly



Bias correction based on past 30-day forecast error

CPC Unified Precip Climatology (1991–2020)

Figure 26: NCEP/GFS Precipitation and Anomaly forecast.

[https://www.cpc.ncep.noaa.gov/products/Precip\\_Monitoring/Figures/GFS/AF\\_curr.p.gfs2a.gif](https://www.cpc.ncep.noaa.gov/products/Precip_Monitoring/Figures/GFS/AF_curr.p.gfs2a.gif)

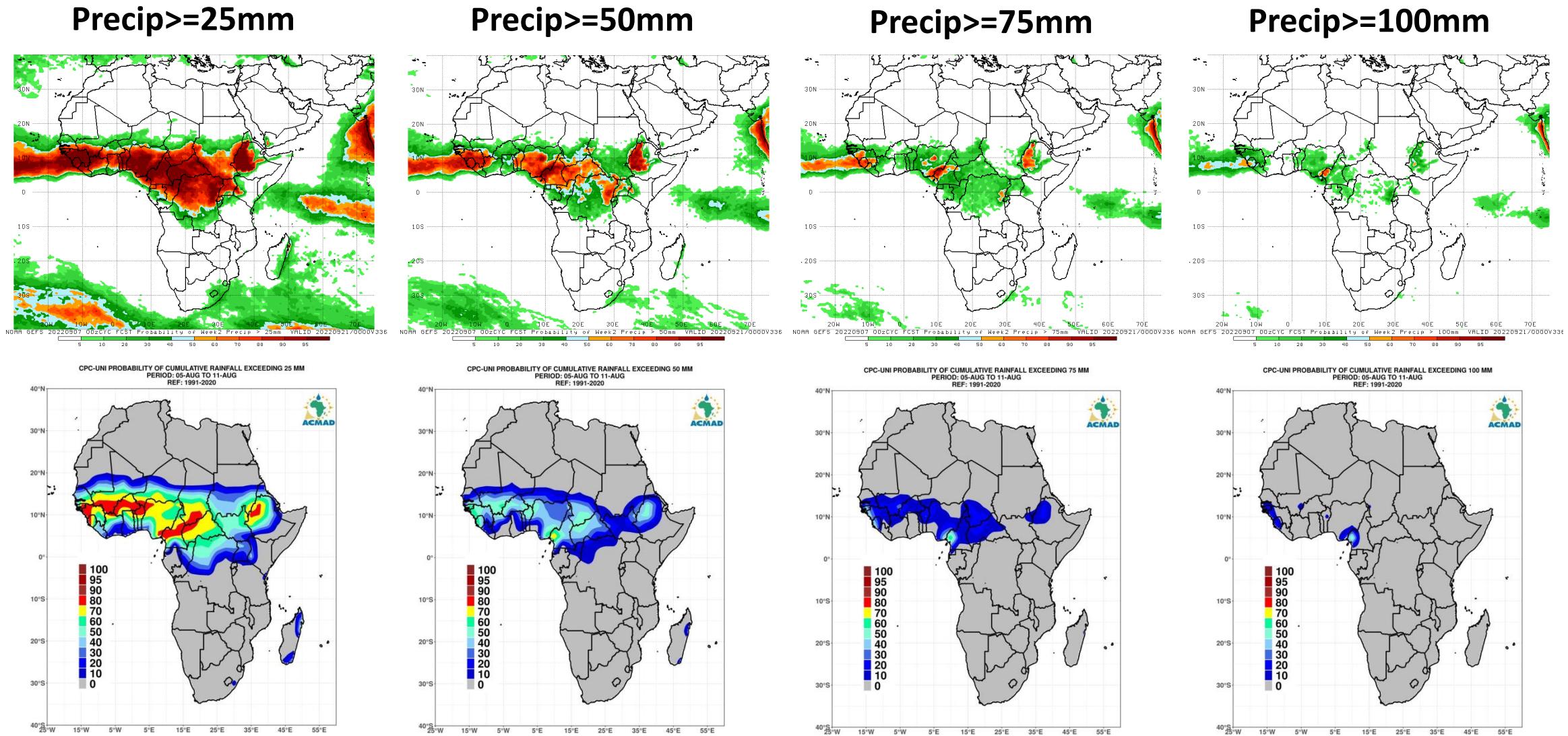
[https://www.cpc.ncep.noaa.gov/products/Precip\\_Monitoring/Figures/GFS/AF\\_curr.p.gfs2b.gif](https://www.cpc.ncep.noaa.gov/products/Precip_Monitoring/Figures/GFS/AF_curr.p.gfs2b.gif)

[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk2\\_bc\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk2_bc_precip.png)

[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk2\\_wdm\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk2_wdm_precip.png)

[https://www.cpc.ncep.noaa.gov/products/international/gefs\\_bc/gefs\\_afr\\_wk2\\_wde\\_precip.png](https://www.cpc.ncep.noaa.gov/products/international/gefs_bc/gefs_afr_wk2_wde_precip.png)

**Week-2 Precipitation  
Probability of Exceedance:  
Forecast and Climo**



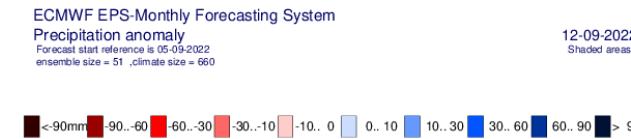
**Figure 32: Week2 Precipitation Total Exceedance Probabilities**

[https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs\\_wk1\\_precip25mm\\_prob\\_africa.html](https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs_wk1_precip25mm_prob_africa.html)  
[https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs\\_wk1\\_precip50mm\\_prob\\_africa.html](https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs_wk1_precip50mm_prob_africa.html)  
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[https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs\\_wk1\\_precip100mm\\_prob\\_africa.html](https://www.cpc.ncep.noaa.gov/products/international/cpc1/data/00/gefs_wk1_precip100mm_prob_africa.html)  
[http://154.66.220.45:8080/thredds/catalog/ACMAD/CDD/climatemonitoringservice/Probability\\_of\\_Exceedance/Weekly/Current/catalog.html](http://154.66.220.45:8080/thredds/catalog/ACMAD/CDD/climatemonitoringservice/Probability_of_Exceedance/Weekly/Current/catalog.html)

# Probability Precipitation Forecasts from ECMWF for week 2 : weekly tercile at below 33% and above 66%

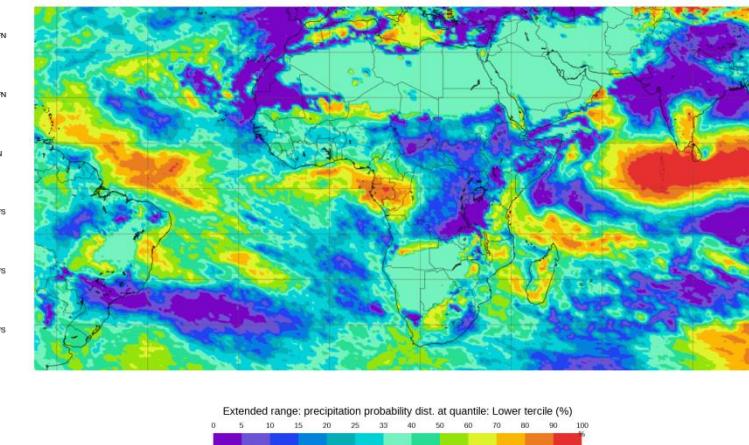
Precipitation: Weekly mean anomalies

Base time: Mon 05 Sep 2022 Valid time: Mon 12 Sep 2022 - Mon 19 Sep 2022 (+336h) Area : Africa



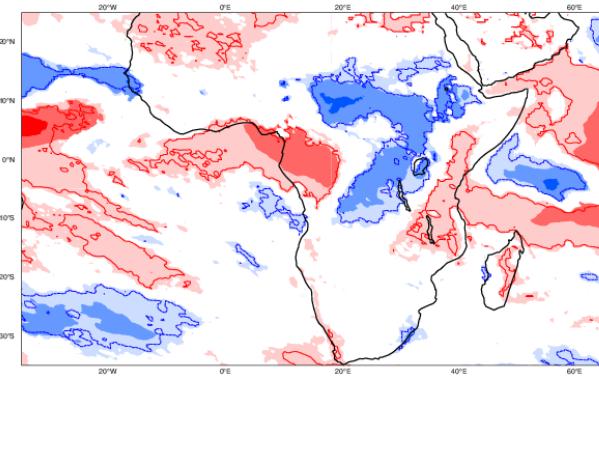
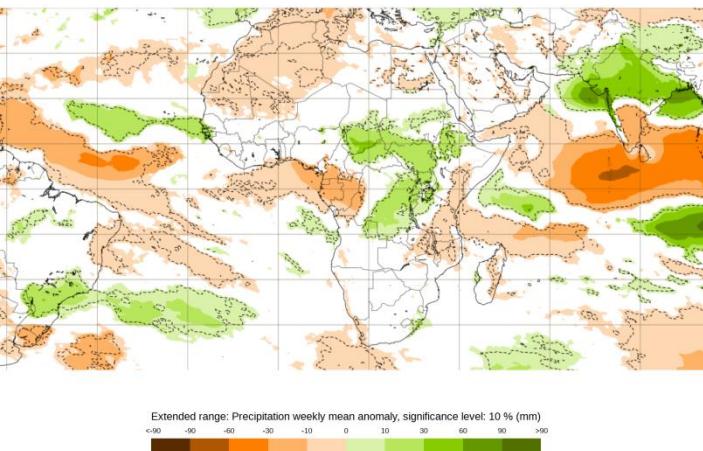
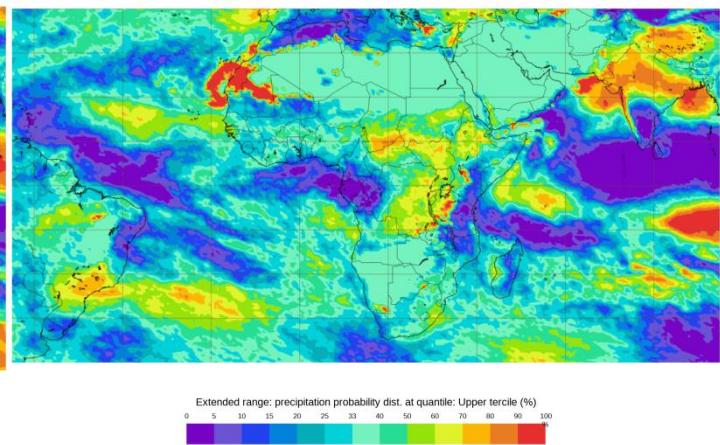
Precipitation: Probability distribution

Base time: Mon 05 Sep 2022 Valid time: Mon 12 Sep 2022 - Mon 19 Sep 2022 (+336h) Distribution group : Lower Tercile  
Area : Africa



Precipitation: Probability distribution

Base time: Mon 05 Sep 2022 Valid time: Mon 12 Sep 2022 - Mon 19 Sep 2022 (+336h) Distribution group : Upper Tercile  
Area : Africa



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[https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc\\_multi\\_anomaly?facets=undefined&time=2019081500,408,2019090100&parameter=precipitation&area=Global](https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc_multi_anomaly?facets=undefined&time=2019081500,408,2019090100&parameter=precipitation&area=Global)

[https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc\\_multi\\_tercile?facets=undefined&time=2021110100,312,021111400&parameter=precipitation&tercile=1&area=Africa](https://www.ecmwf.int/en/forecasts/charts/catalogue/mofc_multi_tercile?facets=undefined&time=2021110100,312,021111400&parameter=precipitation&tercile=1&area=Africa)

Figure 34: Weekly tercile probability forecast below 33%

## IRI SubX Precip Forecast : Week 1 and 2

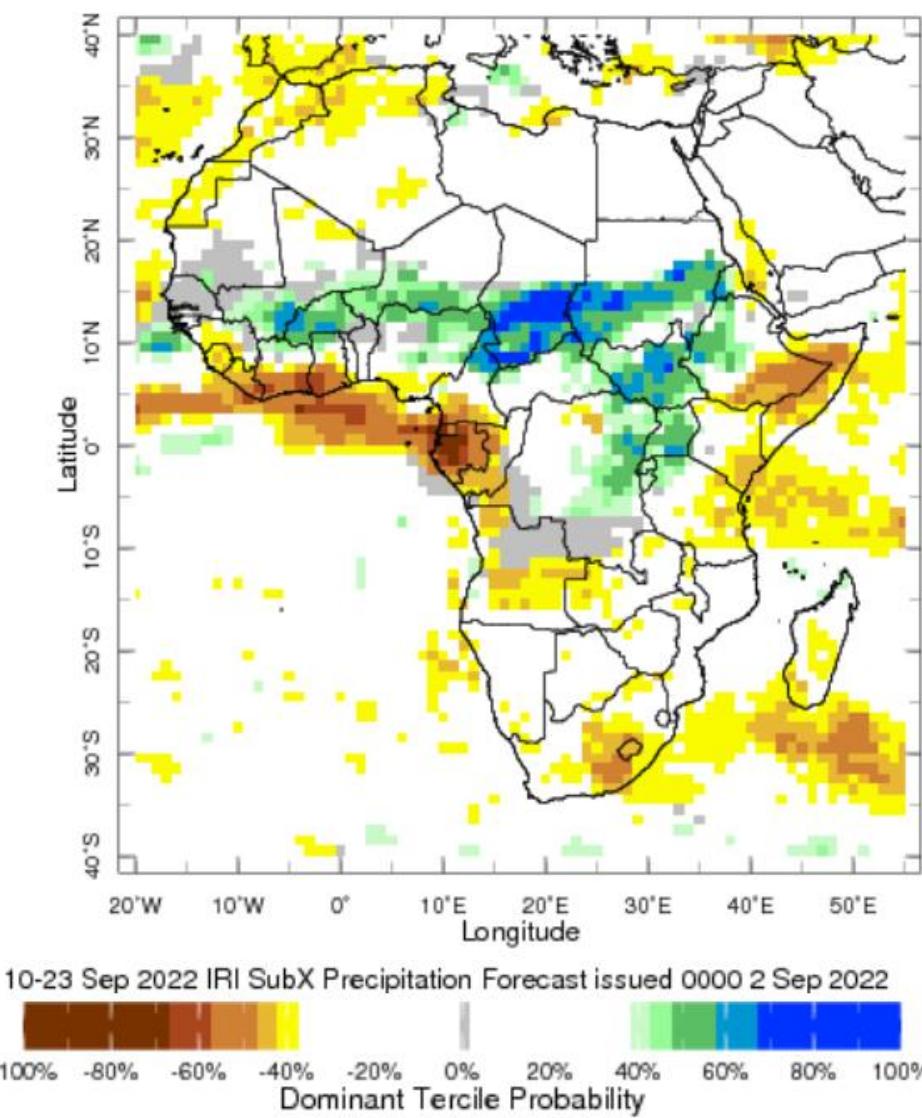
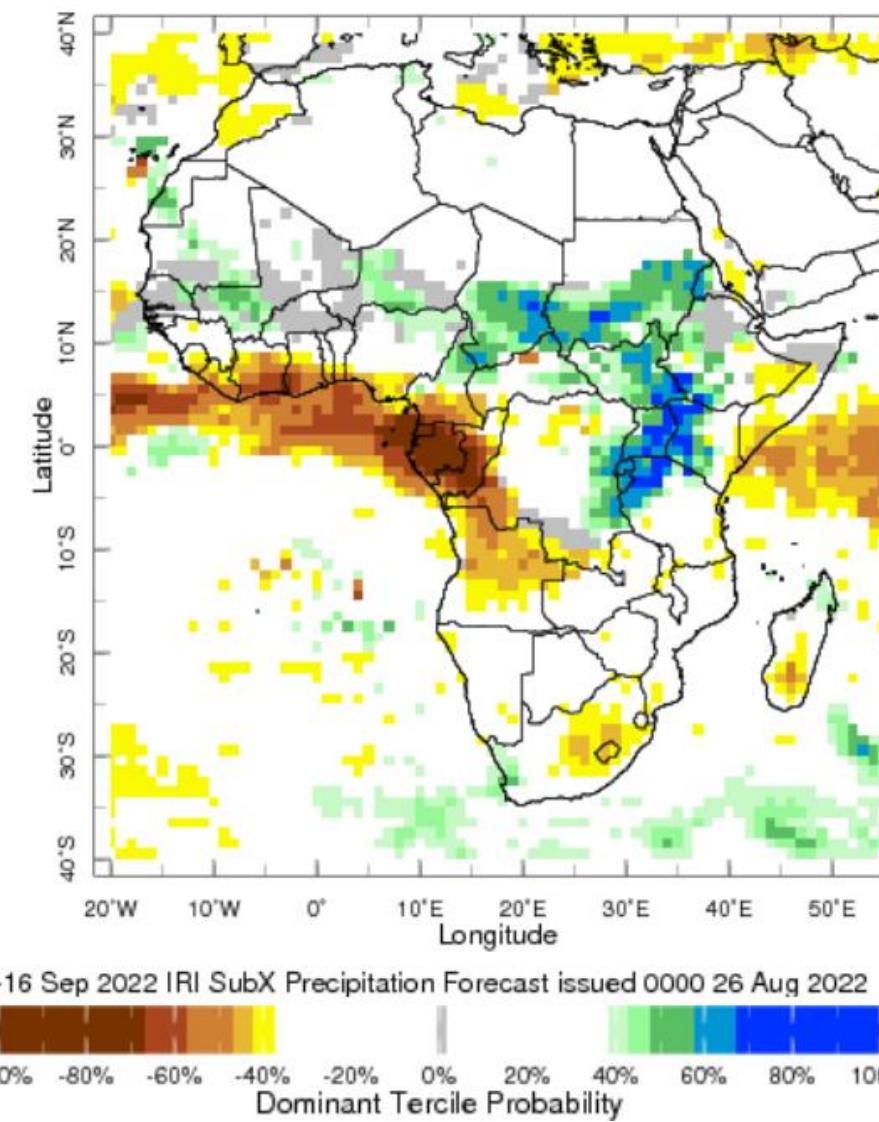
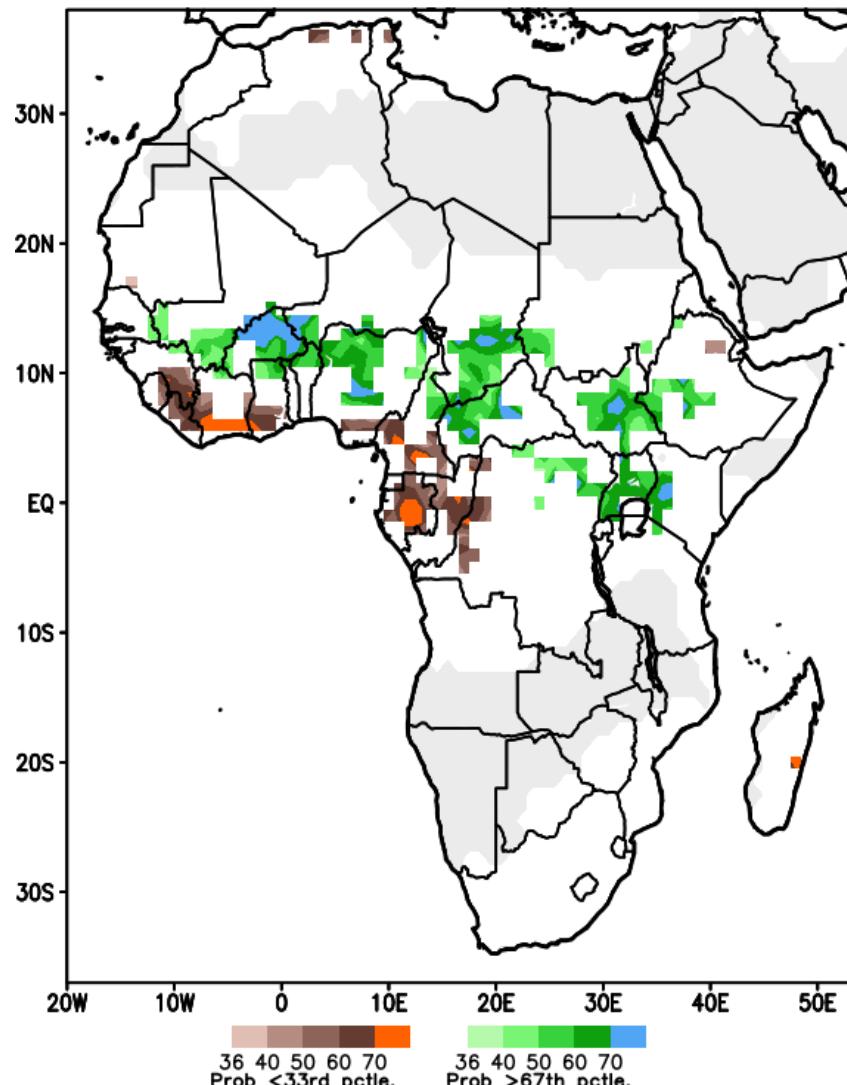


Figure 37: Precipitation and Anomaly forecast

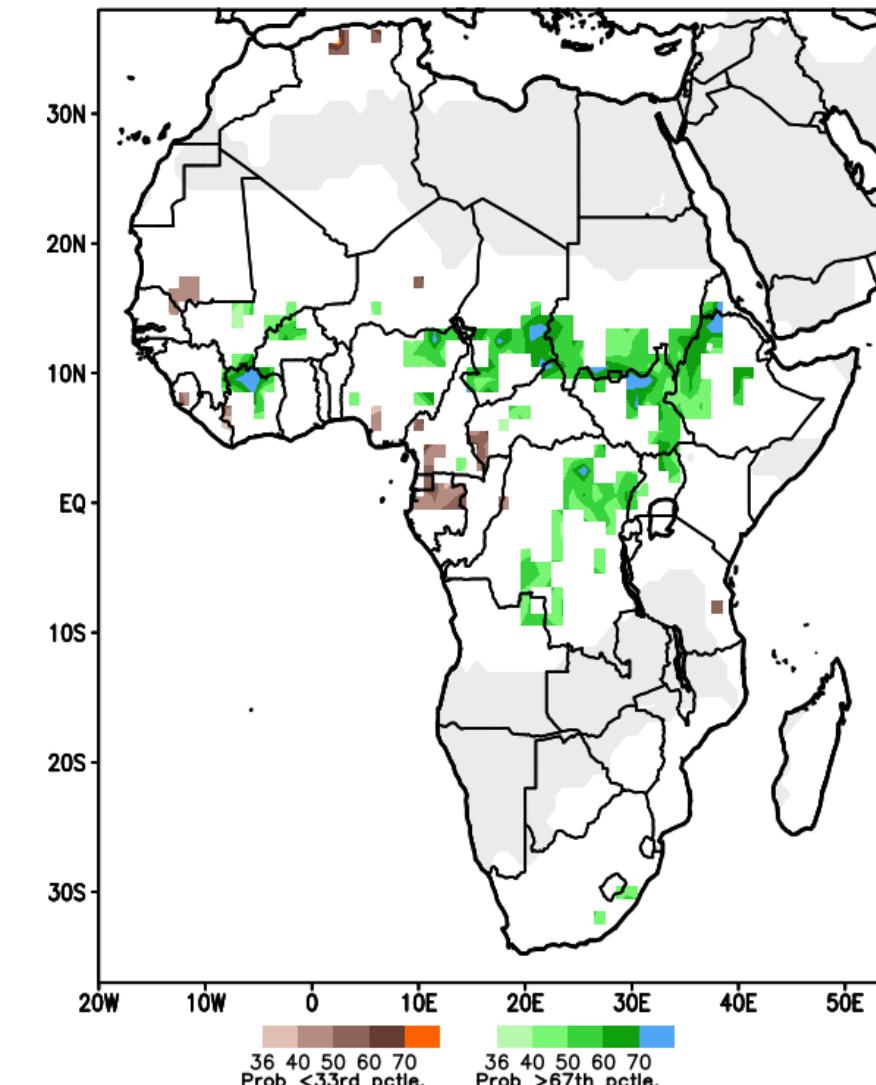
[https://iridl.ldeo.columbia.edu/maproom/Global/ForecastsS2S/precip\\_subx.html?Set-Language=en&bbox=bb%3A-20%3A-40%3A55%3A40%3Abb&S=0000%205%20Feb%202021&region=bb%3A-2%3A30%3A-1%3A31%3Abb](https://iridl.ldeo.columbia.edu/maproom/Global/ForecastsS2S/precip_subx.html?Set-Language=en&bbox=bb%3A-20%3A-40%3A55%3A40%3Abb&S=0000%205%20Feb%202021&region=bb%3A-2%3A30%3A-1%3A31%3Abb)

# Consolidated Ensemble Forecast: Week 1 and 2

CFS/ECMWF/ECCC/GEFS Correlation Weighted, Week1  
Precip POE <33rd & > 67th Pctl., Valid:07Sep2022–13Sep2022



CFS/ECMWF/ECCC/GEFS Correlation Weighted, Week2  
Precip POE <33rd & > 67th Pctl., Valid:14Sep2022–20Sep2022



[https://ftp.cpc.ncep.noaa.gov/International/cons\\_precip/cons\\_wk1\\_afr\\_prcp\\_33N67pct.png](https://ftp.cpc.ncep.noaa.gov/International/cons_precip/cons_wk1_afr_prcp_33N67pct.png)  
[https://ftp.cpc.ncep.noaa.gov/International/cons\\_precip/cons\\_wk2\\_afr\\_prcp\\_33N67pct.png](https://ftp.cpc.ncep.noaa.gov/International/cons_precip/cons_wk2_afr_prcp_33N67pct.png)

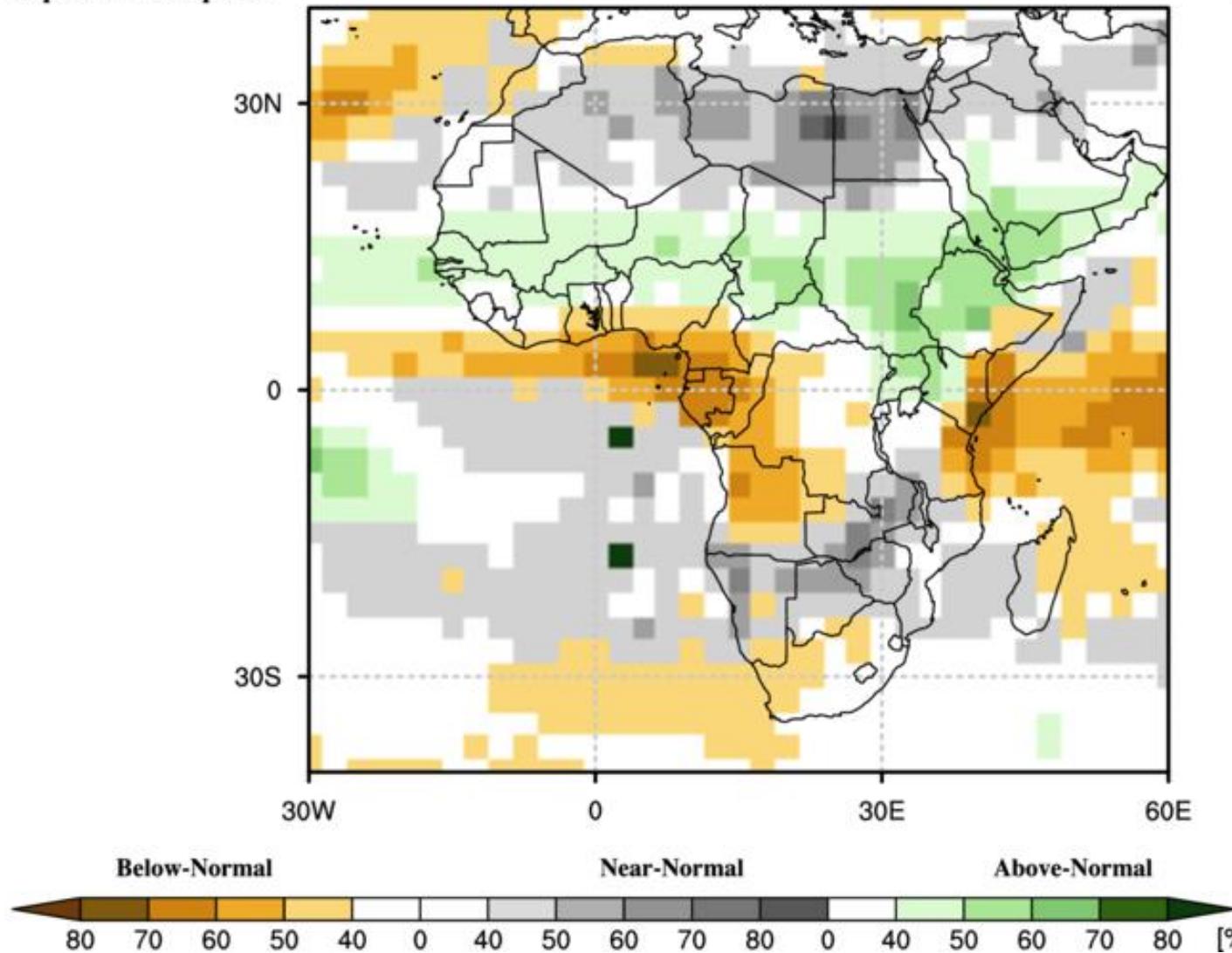
# Monthly Forecast from WMO Lead Centre Multi-Model Ensemble

## Probabilistic Multi-Model Ensemble Forecast

Beijing,CMCC,CPTEC,ECMWF,Exeter,Melbourne,Montreal,Moscow,Offenbach,Pretoria,Seoul,Tokyo,Toulouse,Washington

Precipitation : Sep2022

(issued on Aug2022)



The LCMM-level model set tells us that part of the Africa region will have average to higher than average rainfall.

**Figure 35: Monthly Precipitation forecast**

[https://www.wmclc.org/seasonPmmeUI/view  
?winName=PlotView1566209968309](https://www.wmclc.org/seasonPmmeUI/view?winName=PlotView1566209968309)



- 1. Climate Monitoring**
- 2. Status of Drivers**
- 3. Dynamical Model Forecast : Week 1 and 2**
- 4. Week 1 and 2 Outlook**

# CLIMATOLOGY OF PRECIPITATIONS FOR UPCOMING 2 WEEKS

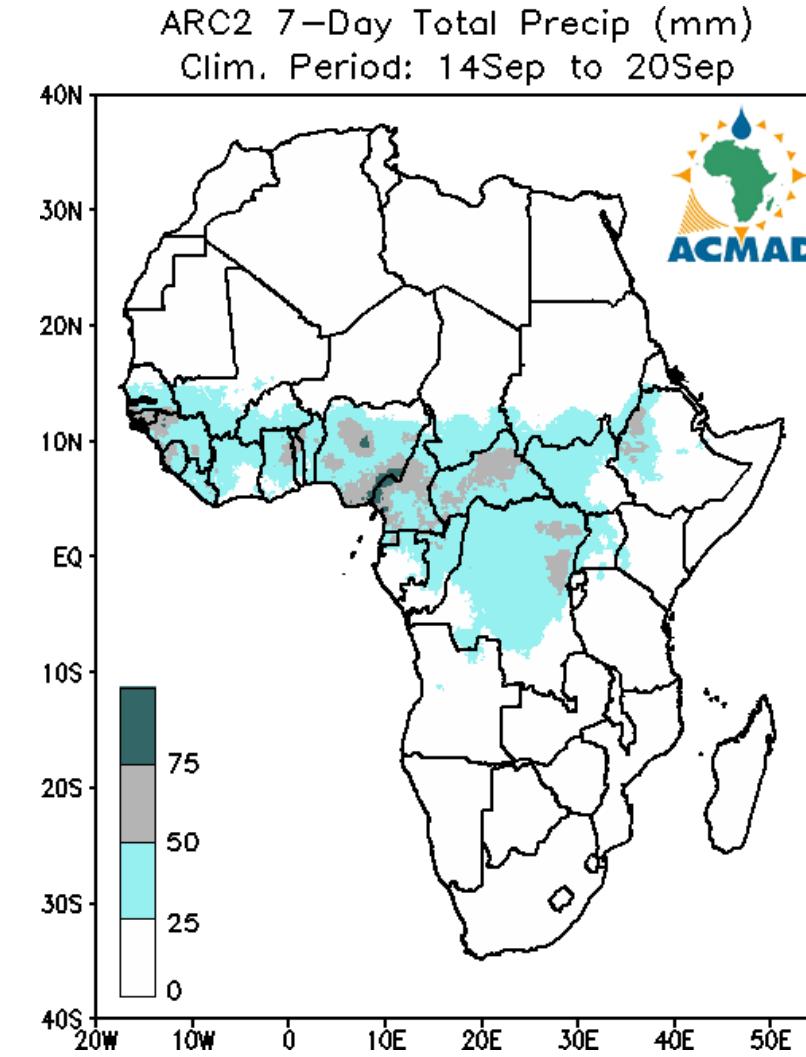
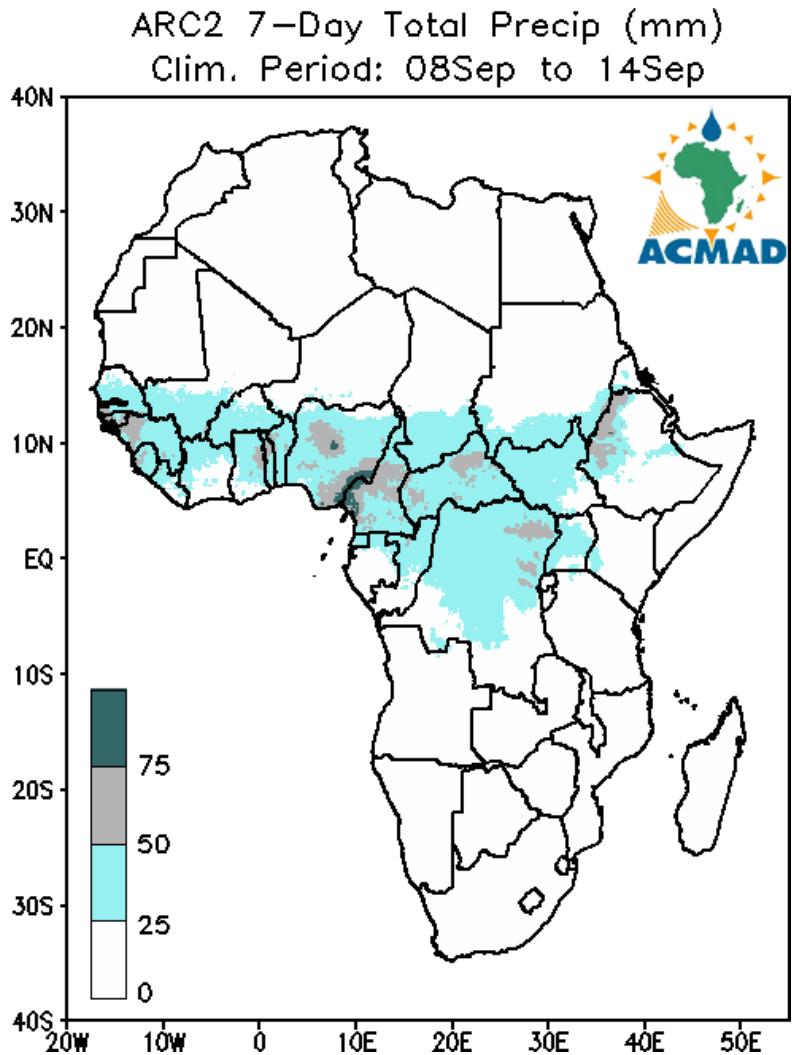
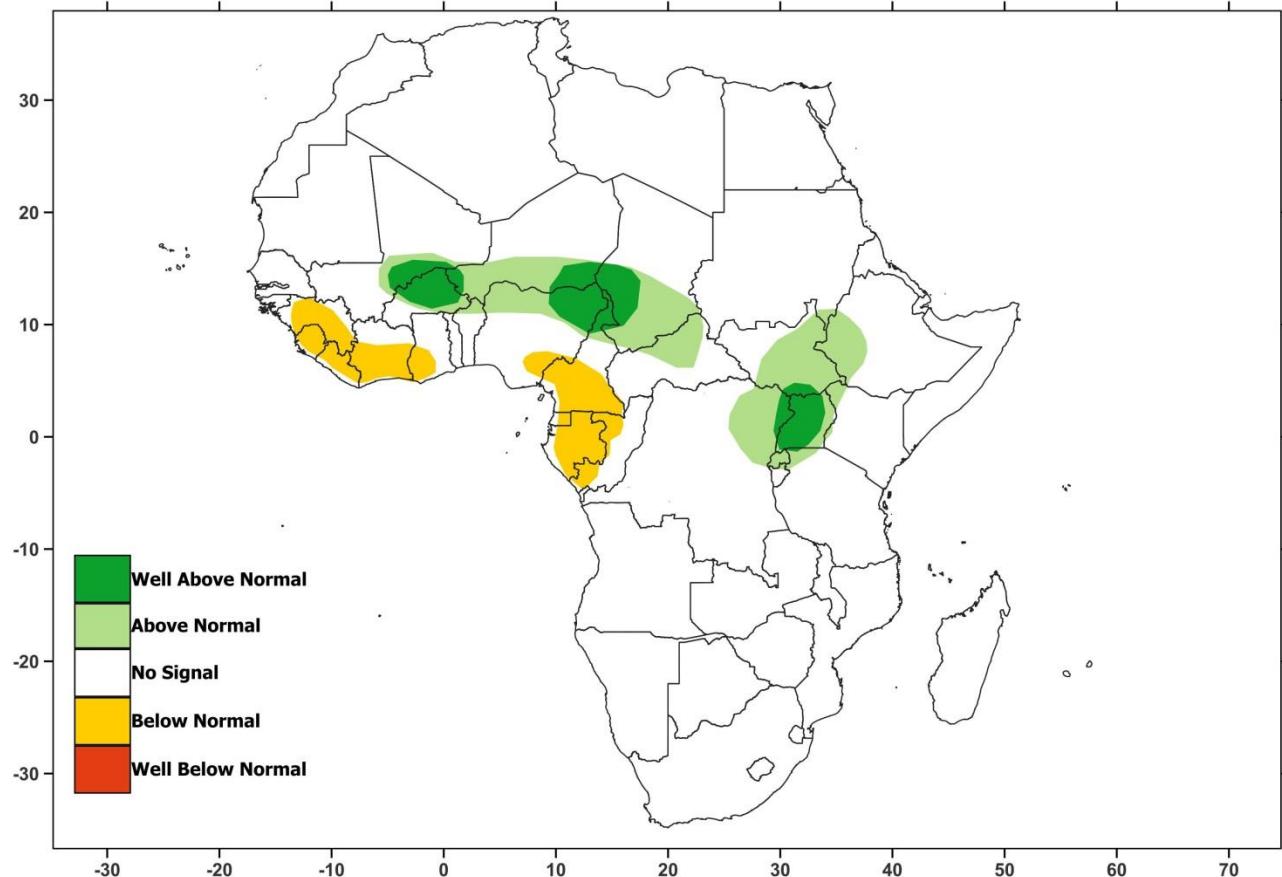


Figure 38: Climatology of Precipitation for week-1(left panel) and week-2 (right panel)

[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/Precip\\_Clim\\_Next\\_Days/current/Africa\\_ARC2\\_Climo\\_Wk1.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/Precip_Clim_Next_Days/current/Africa_ARC2_Climo_Wk1.png)  
[http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin\\_TN/Precip\\_Clim\\_Next\\_Days/current/Africa\\_ARC2\\_Climo\\_Wk2.png](http://sgbd.acmad.org:8080/thredds/fileServer/ACMAD/CDD/ClimateBulletin_TN/Precip_Clim_Next_Days/current/Africa_ARC2_Climo_Wk2.png)

# PRECIPITATIONS FORECAST FOR THE UPCOMING TWO WEEKS

PRECIP FCST WEEK1 07-13 SEPTEMBER 2022



PRECIP FCST WEEK2 14-20 SEPTEMBER 2022

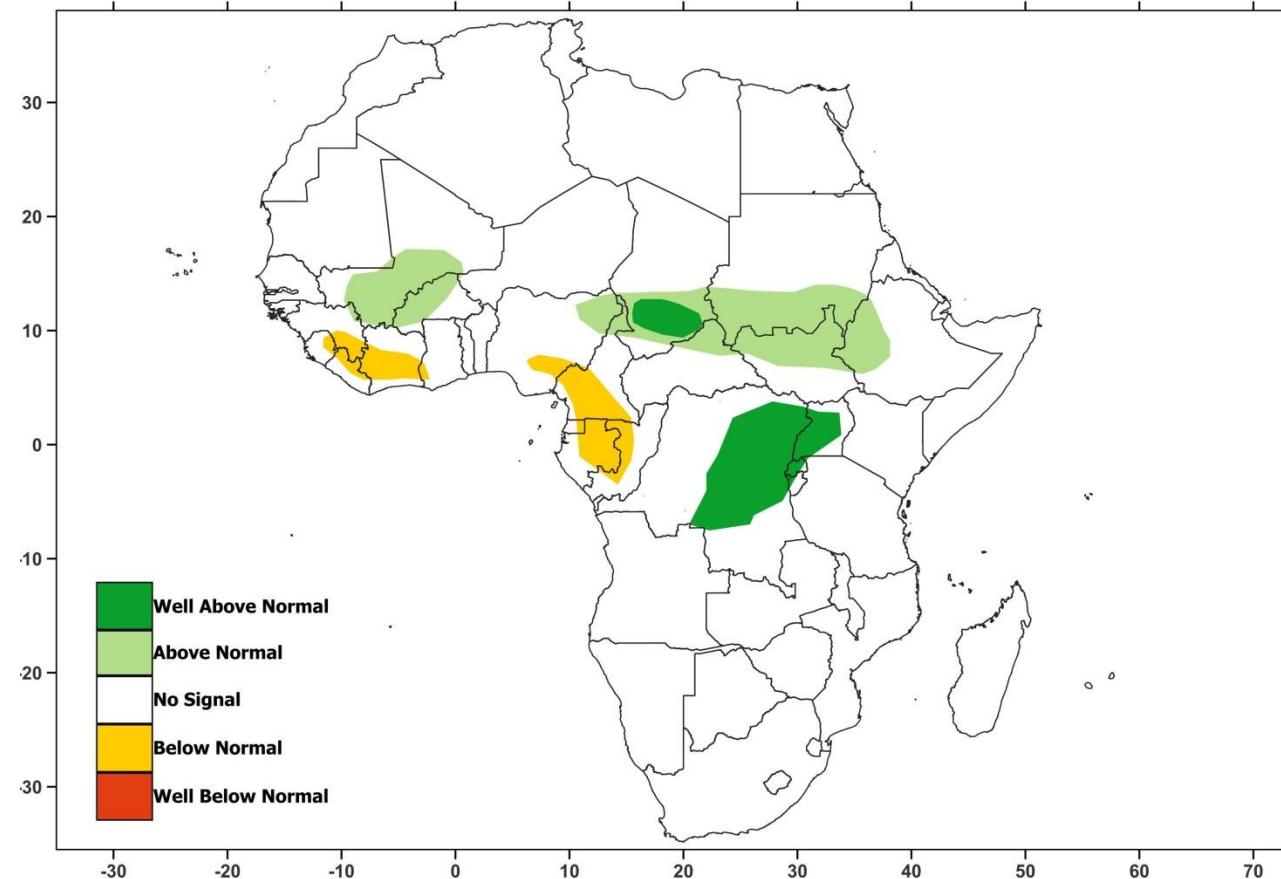


Figure 39: Precipitation Outlook for week-1 (left panel) and week-2 (right panel)