

8 MARCH  
2024

## CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

### HIGHLIGHTS

#### Rainfall Prediction



- High likelihood of light showers (15mm) is predicted for the Eastern, Uva and Central provinces during 6 - 12 March.

#### Monitored Rainfalls



- Rainfall on 28 Feb was highest (88 mm) at Rufus Wewa (EP).
- During the last February, 60mm rainfall expected but received only 10 mm.

#### Monitored & Predicted Wind



- Winds at 850mb (1.5 km) were north easterly from 26 Feb - 3 Mar reaching up to 8 m/s.
- Winds at 850mb (1.5 km) are predicted north easterly from 7 - 13 Mar reaching up to 4 m/s.

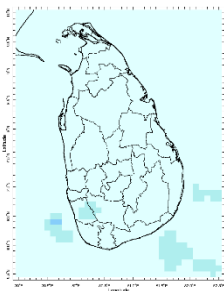
#### Monitored Sea & Land Temp



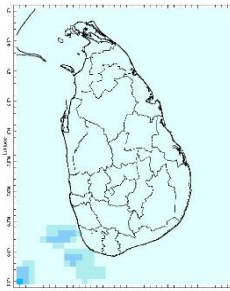
- Maximum daily temperature was in Kurunegala (37.0°C) & Katunayake (36.7°C).
- Sea surface temperature around Sri Lanka was 0.25 - 1.5°C above normal.
- Strong EL Nino and positive indian ocean dipole patterns sustained.

### Monitoring Rainfall

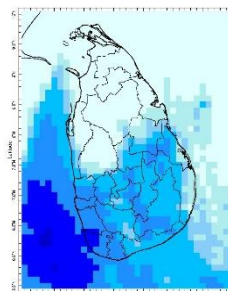
#### Daily Estimates for Rainfall from 27<sup>th</sup> February - 5<sup>th</sup> March 2024



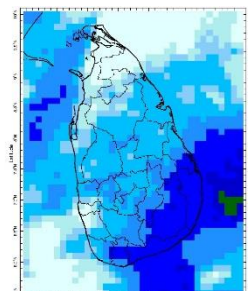
27 February



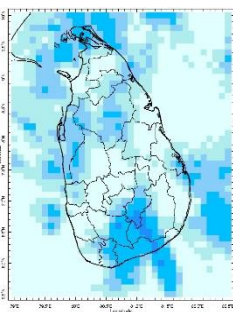
28 February



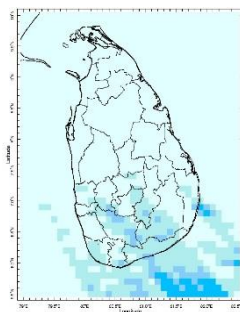
29 February



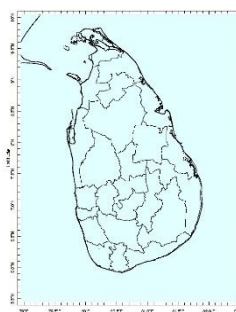
1 March



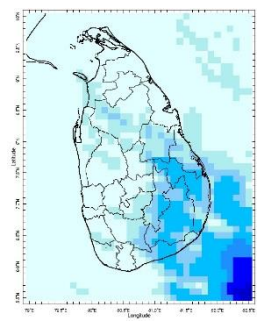
2 March



3 March



4 March



5 March



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Pacific sea state: March 4, 2024

The SST Anomalies for the NINO3.4 region shows a +1.7 °C on the week ending 4<sup>th</sup> March - thus a moderate-strong El Nino is sustained. Consensus of models predict a continuation of the El Niño event until May 2024 before weakening thereafter.

Indian Ocean State

Sea surface temperature around Sri Lanka was 0.5°C above normal to the Northern, Western, and Southern half of the country in 13<sup>th</sup> February - 19<sup>th</sup> February 2024. A positive Dipole Mode has set in across the Indian Ocean since 8<sup>th</sup> of June.

Predictions

Rainfall

14 Day prediction: NCEP GFS models

From 6<sup>th</sup> March - 12<sup>th</sup> March:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
15	Eastern, Uva, Central
≤ 5	Northern, Southern, Sabaragamuwa, Western, North Central, North Western

From 13<sup>th</sup> March - 19<sup>th</sup> March:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
15	Eastern, Central, Sabaragamuwa, Uva, Western, Southern
≤ 5	Northern, North Western, North Central

MJO based OLR predictions

For the next 15 days:

MJO shall slightly enhance the rainfall during 6<sup>th</sup> - 10<sup>th</sup> March, slightly suppress the rainfall during 11<sup>th</sup> - 15<sup>th</sup> March, and moderately suppress the rainfall during 16<sup>th</sup> - 20<sup>th</sup> March for Sri Lanka.

Interpretation

Monitoring

**Rainfall:** During the last two weeks, there had been fairly heavy rainfall over the following areas: Rufus Wewa, Kahaduwa.

Daily Average Rainfall in the Met stations for previous week of (28<sup>th</sup> February - 6<sup>th</sup> March) = 0.0 mm  
Maximum Daily Rainfall: 2.7 mm & Minimum Daily Rainfall: 0.0 mm.

Region	Average rainfall for last 8 days (mm)	Average temperature for last 8 days (°C)	
		Maximum	Minimum
Northern plains	0.0	32.8	23.5
Eastern hills	0.0	27.0	16.6

Eastern plains	0.0	32.2	24.0
Western hills	0.1	29.9	17.8
Western plains	0.0	33.9	24.9
Southern plains	0.0	34.2	24.4

Region	Average rainfall for last 8 days (mm)	Daily maximum rainfall for last 8 days (mm)	Daily minimum rainfall for last 8 days (mm)
Hydro catchment	0.1	5.0	0.0

**Wind:** North easterly winds prevailed in the sea area and around the island last week.

**Temperatures:** The temperature anomalies were above normal for some parts of the Southern, Western, Sabaragamuwa, North Western, Eastern, Central, and Uva provinces of the country driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (6<sup>th</sup> March - 12<sup>th</sup> March), light showers (15 mm) is predicted for the Eastern, Uva, and Central provinces of the country.

**Temperatures:** The temperature will remain above normal for some parts of the Western, North Western, Northern, North Central, Southern, and Uva provinces during 7<sup>th</sup> - 13<sup>th</sup> March.

**Teleconnections:** A positive Dipole Mode has set in across the Indian Ocean since 8<sup>th</sup> of June. MJO shall slightly enhance the rainfall during 6<sup>th</sup> - 10<sup>th</sup> March, slightly suppress the rainfall during 11<sup>th</sup> - 15<sup>th</sup> March, and moderately suppress the rainfall during 16<sup>th</sup> - 20<sup>th</sup> March for Sri Lanka.

**Seasonal Precipitation:** The precipitation forecast for the March-April-May, 2024 season shows a 40% tendency toward above normal precipitation for the southern half of the country.

## Terminology for Rainfall Ranges

	Rainfall
Light Showers	Less than 12.5 mm
Light to Moderate	Between 12.5 mm and 25 mm
Moderate	Between 25 mm and 50 mm
Fairly Heavy	Between 50 mm and 100 mm
Heavy	Between 100 mm and 150 mm
Very Heavy	More than 150 mm

Tropical Climate Guarantee, Federation of Environment, Climate and Technology, Columbia University Water Center, <sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.



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## Weekly Climate Bulletin for Sri Lanka

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- Monthly Rainfall Monitoring
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- Weekly Average SST Anomalies

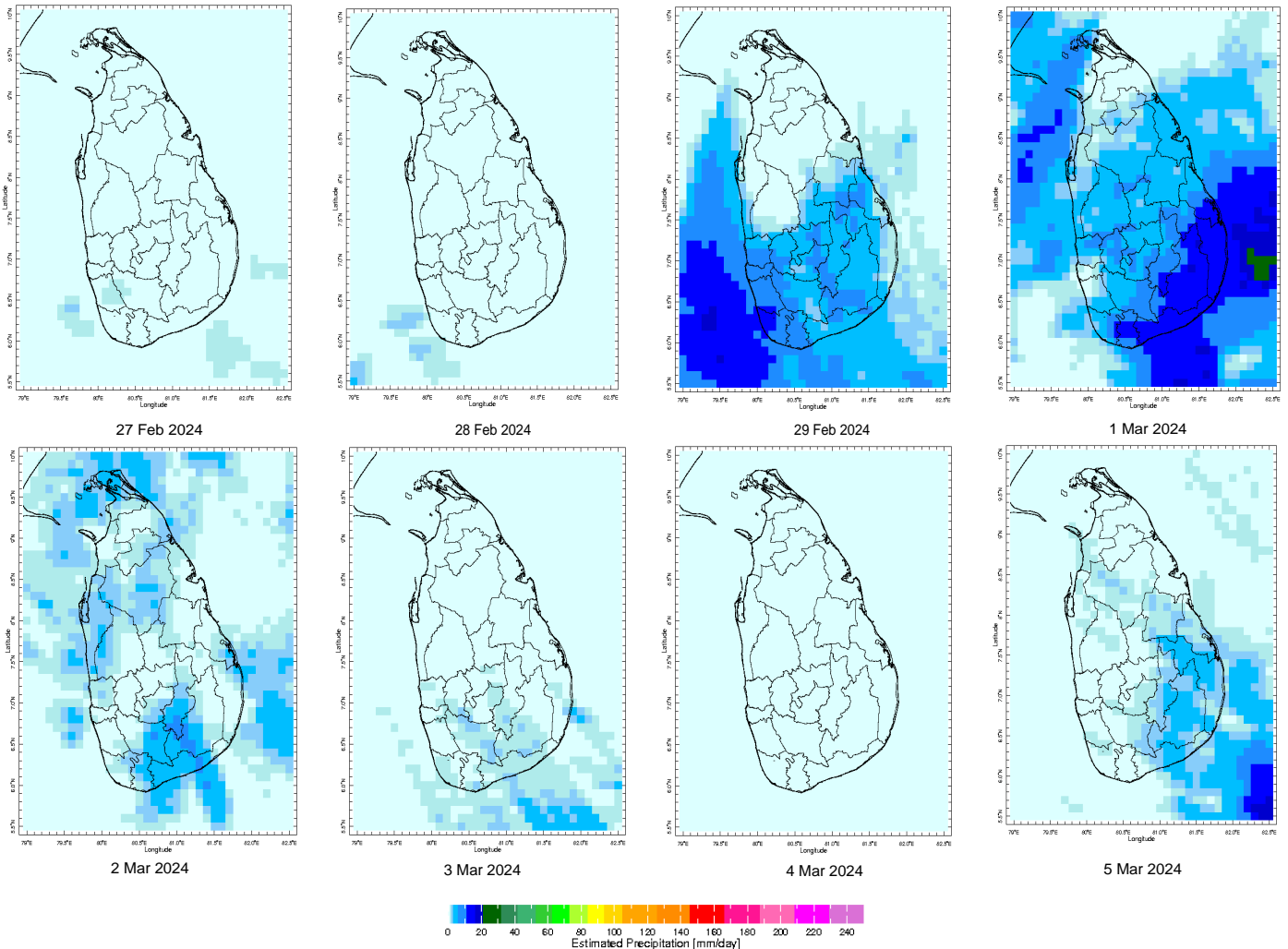
#### 2. Predictions

- NCEP GFS Ensemble 1-14 day Rainfall Predictions
- GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- MJO Related OLR Forecast
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## MONITORING

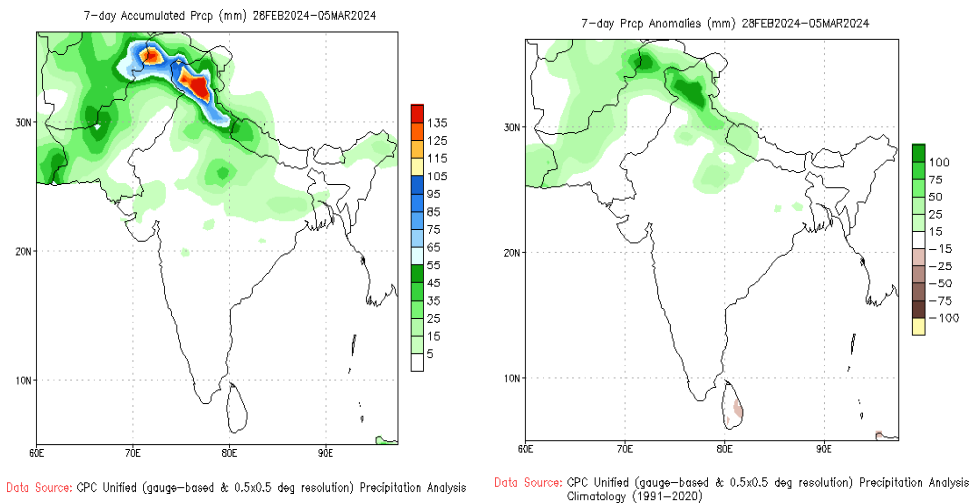
### Daily Rainfall Monitoring

The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



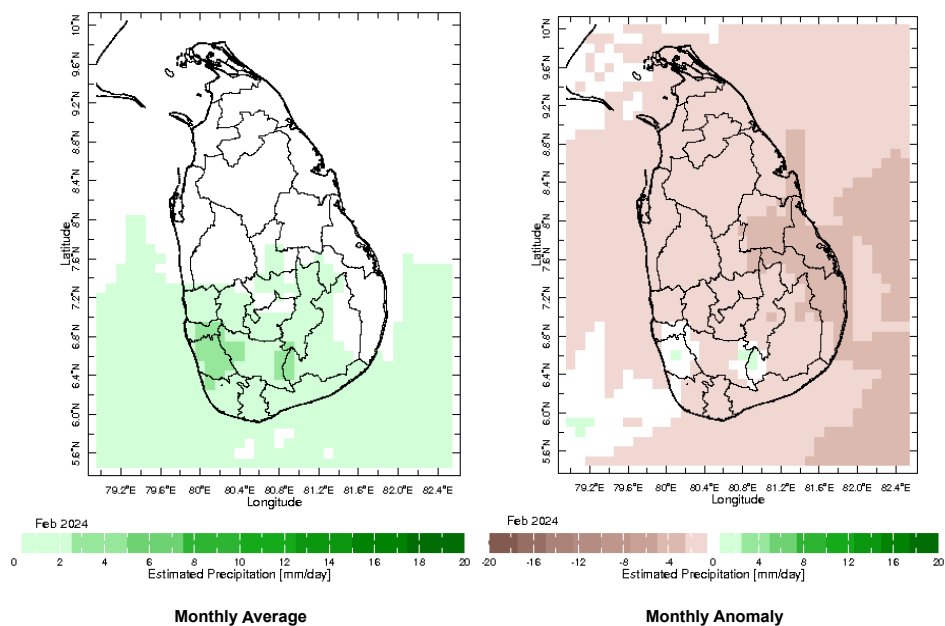
## Weekly Rainfall Monitoring

The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.

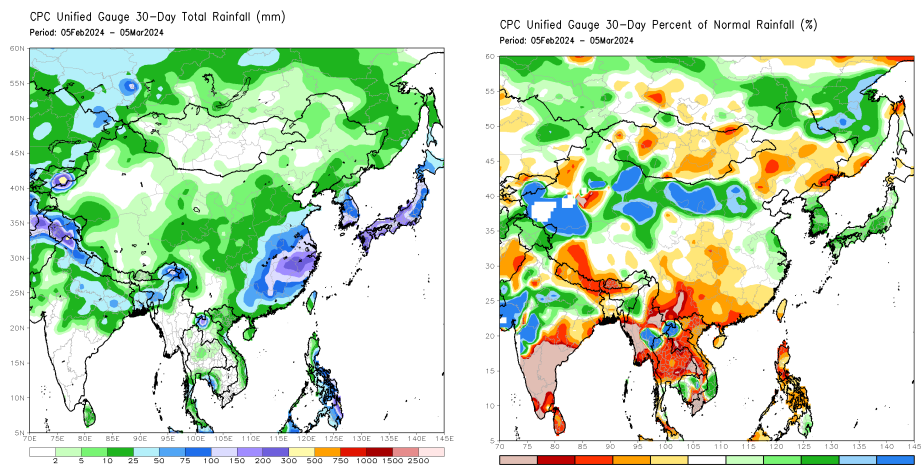


## Monthly Rainfall Monitoring

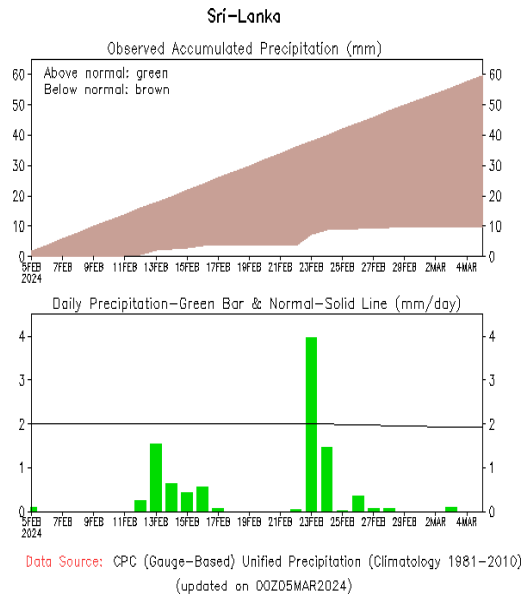
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



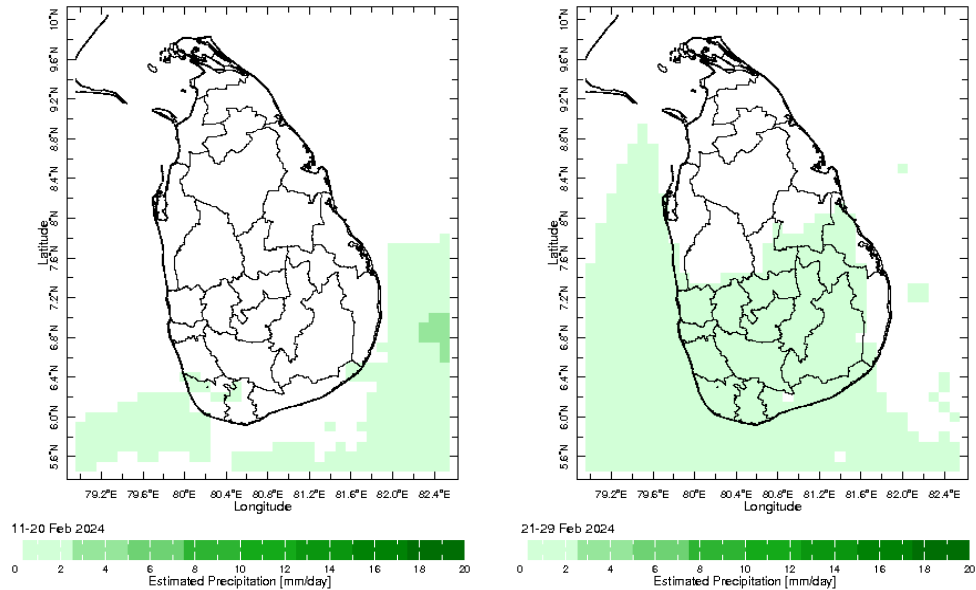
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.



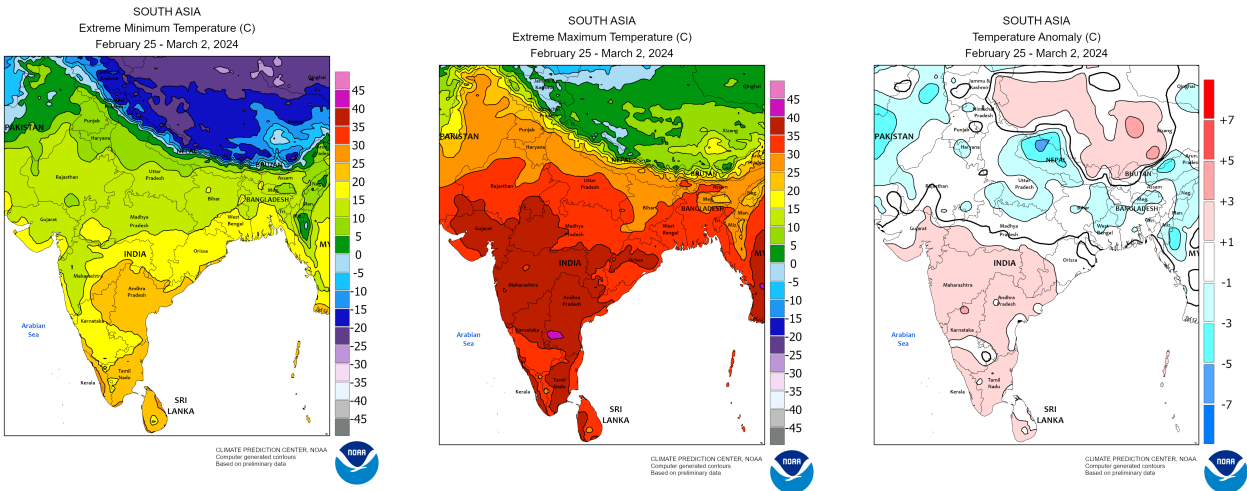
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



**Dekadal (10 Day) Satellite Derived Rainfall Estimates**



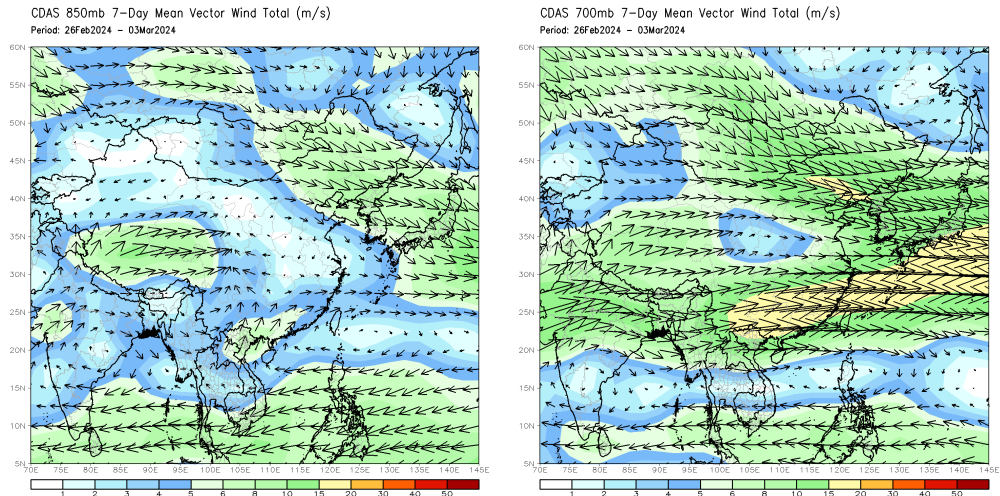
**Weekly Temperature Monitoring**





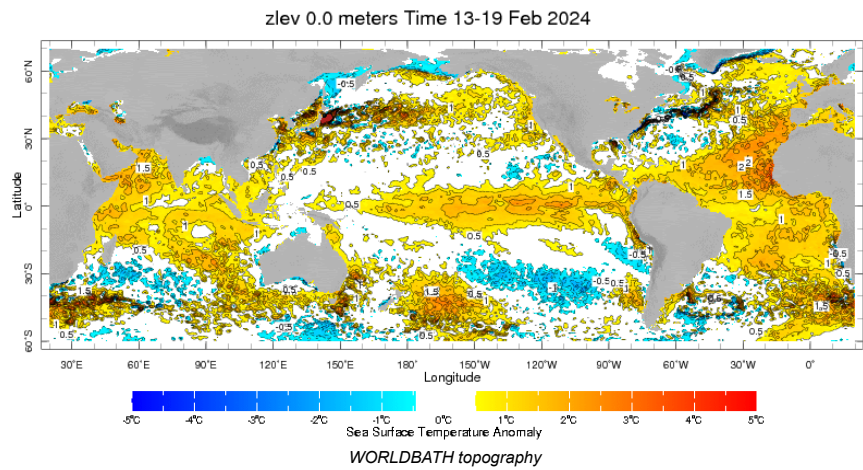
**Weekly Wind Monitoring**

The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.

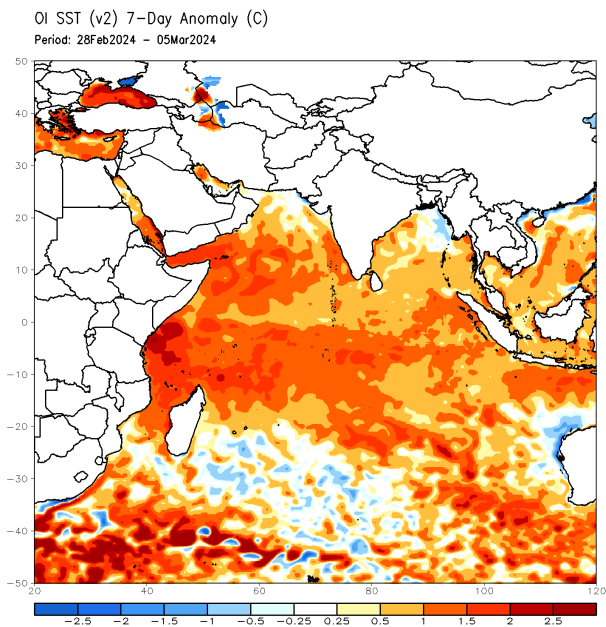


**Weekly Average SST Anomalies**

Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

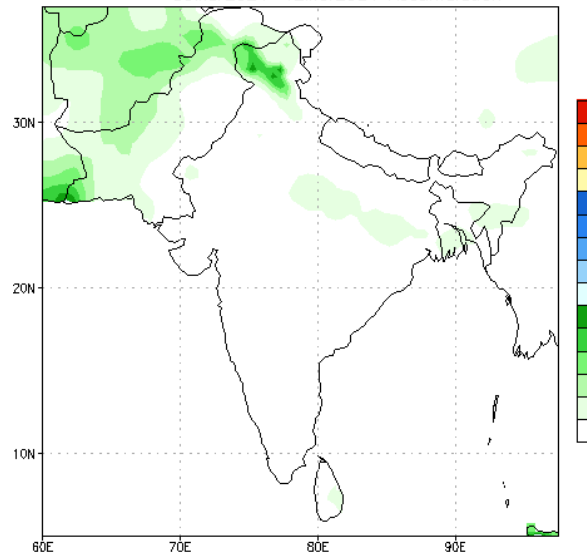


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



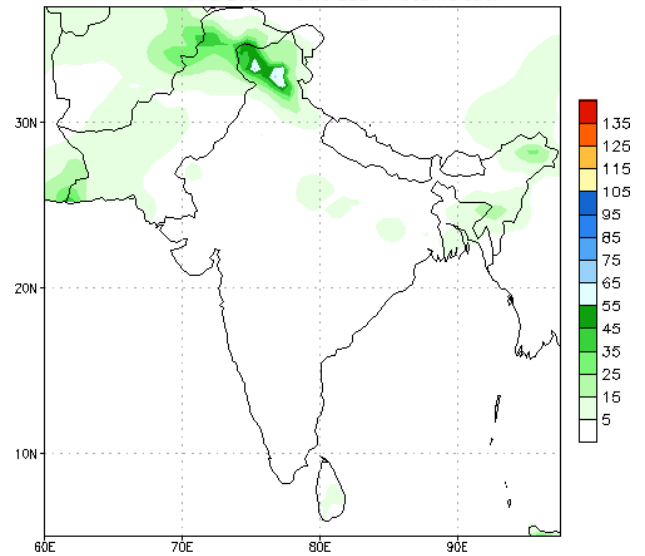
**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 06Mar2024  
06Mar2024–12Mar2024 Accumulation



Bias correction based on last 30-day forecast error

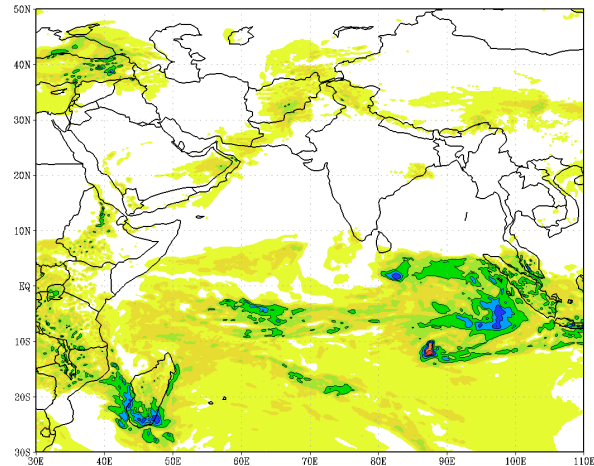
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 06Mar2024  
13Mar2024–19Mar2024 Accumulation



Bias correction based on last 30-day forecast error

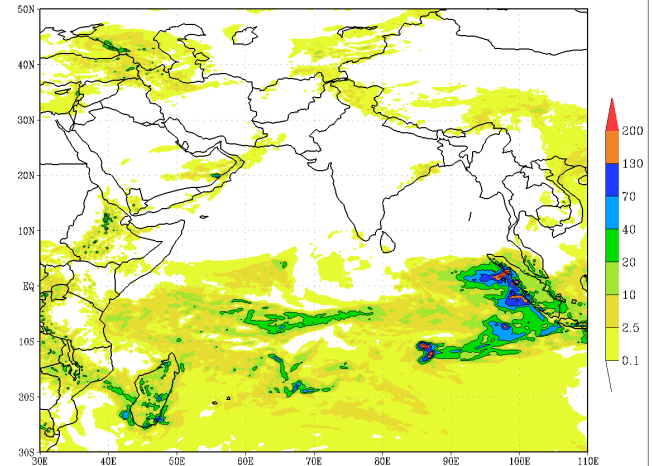
**IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India**

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)  
based on 00 UTC of 06-03-2024 valid for 03 UTC of 07-03-2024



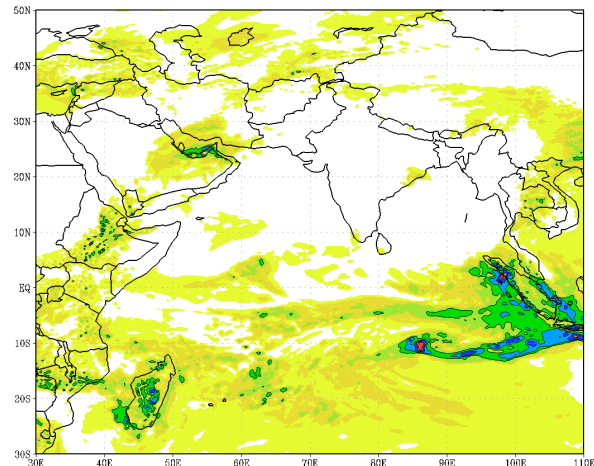
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)  
based on 00 UTC of 06-03-2024 valid for 03 UTC of 08-03-2024



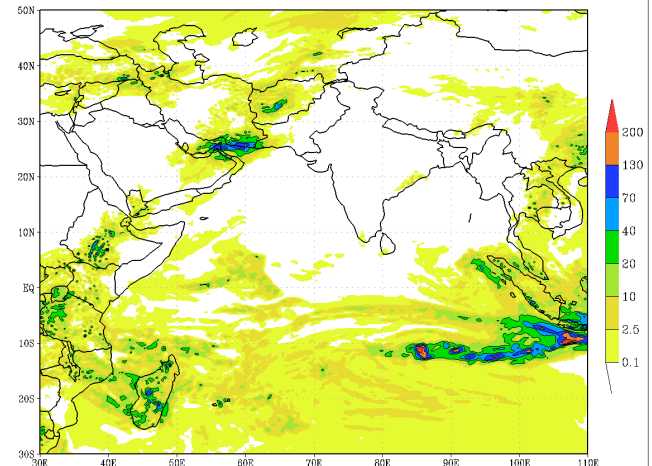
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IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)  
based on 00 UTC of 06-03-2024 valid for 03 UTC of 09-03-2024



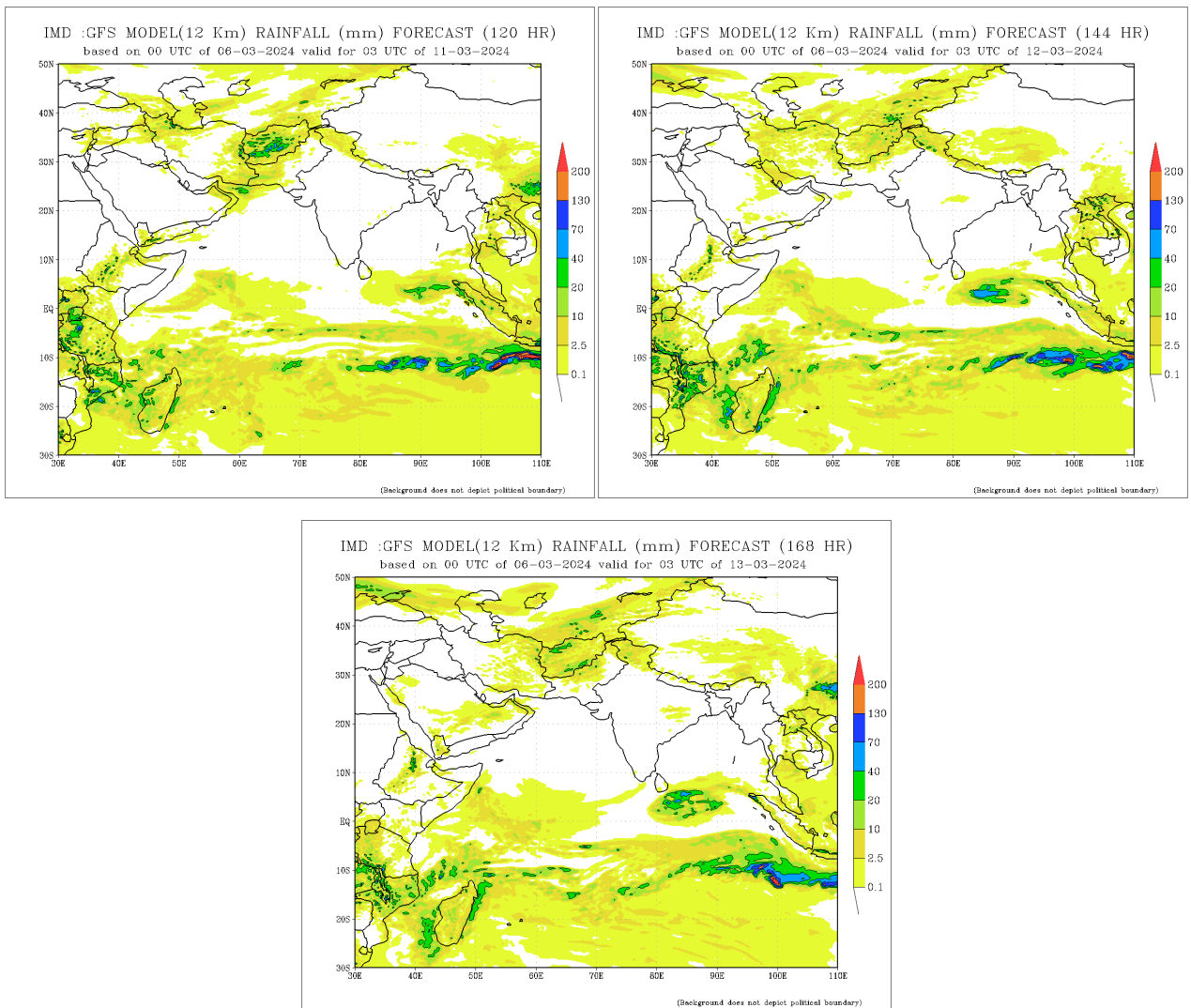
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)  
based on 00 UTC of 06-03-2024 valid for 03 UTC of 10-03-2024



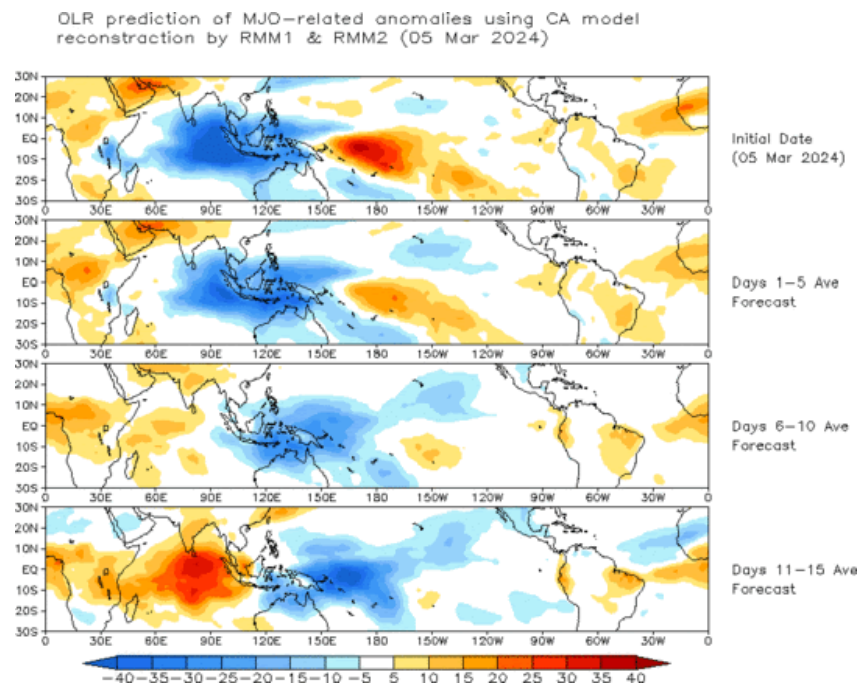
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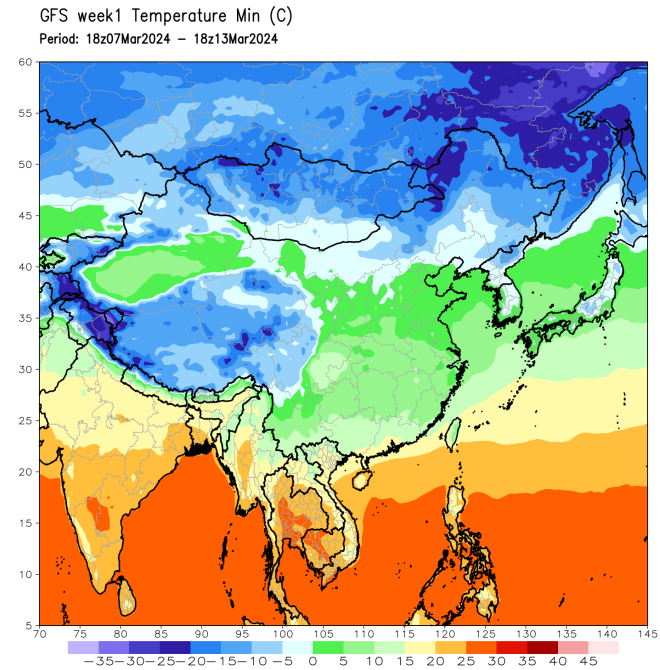
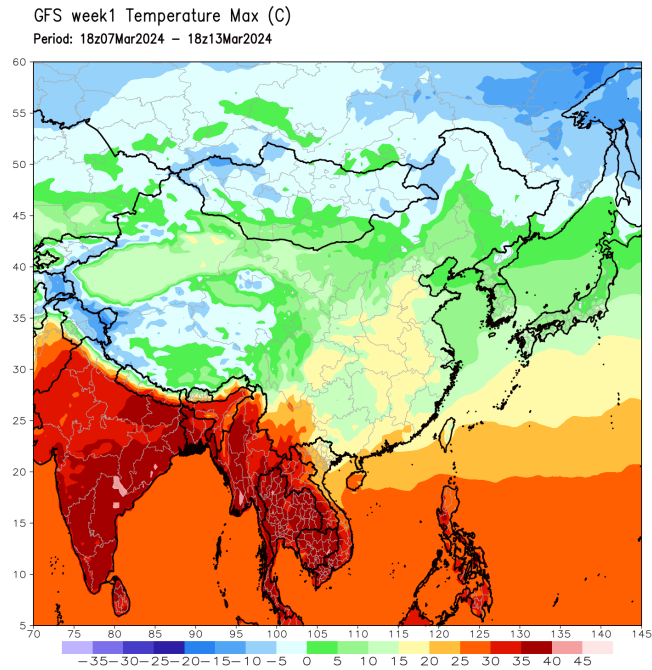
## Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated anomolous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.



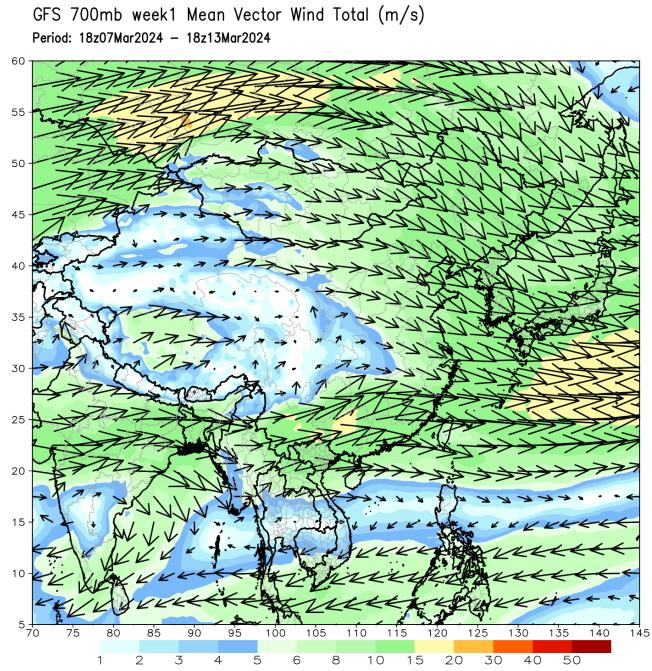
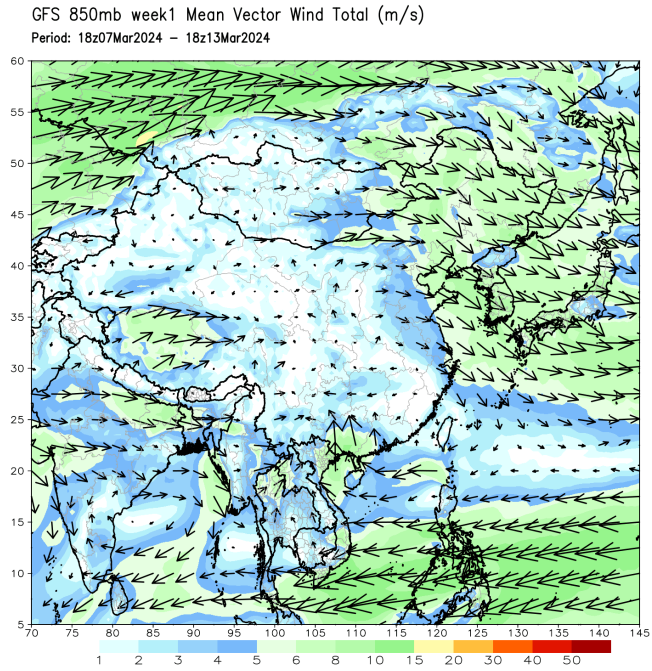
Weekly Temperature Forecast

Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)



Weekly Wind Forecast

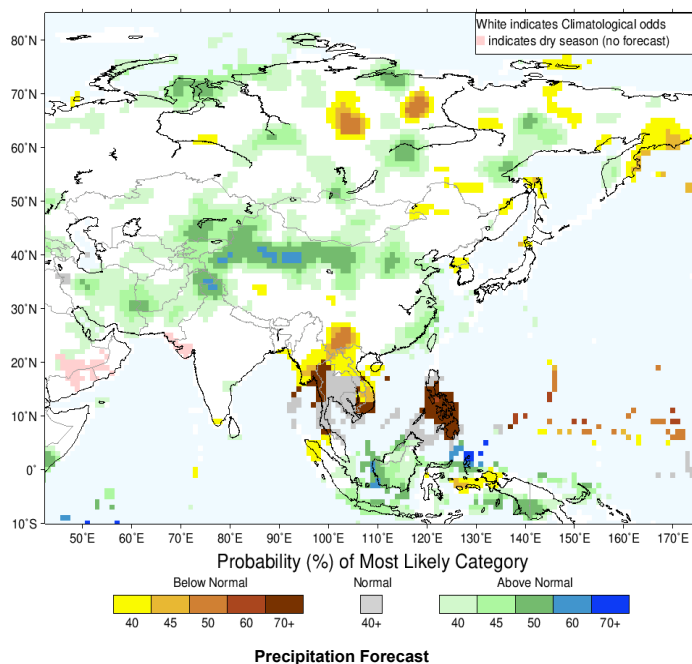
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



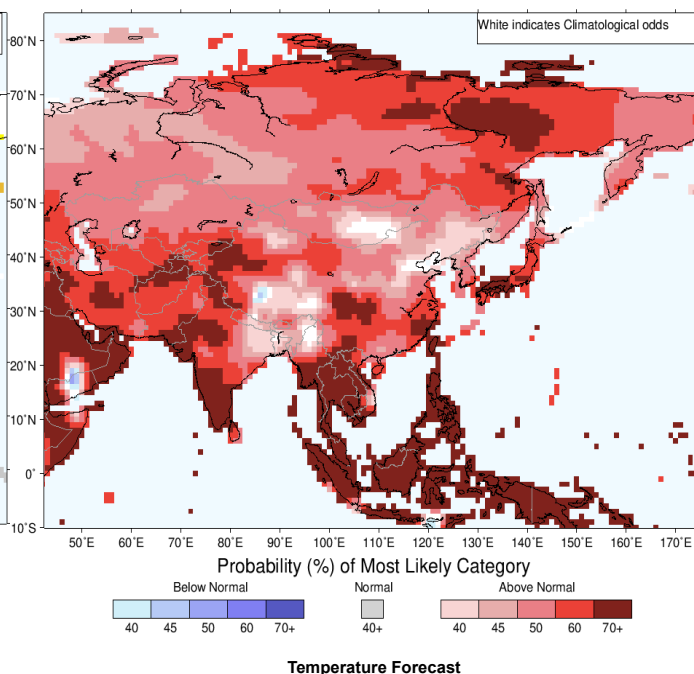
## Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).

IRI Multi-Model Probability Forecast for Precipitation for  
March–April–May 2024, Issued February 2024



IRI Multi-Model Probability Forecast for Temperature for  
March–April–May 2024, Issued February 2024



### About Us

FECT is a federation of 7 organizations registered in four countries which works in countries across the Indian Ocean Islands and its littoral. Over the last 20 years, we have had operations in Africa, South Asia, South-East Asia but now it is mostly in the Indian Ocean Islands.

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