

## HIGHLIGHTS

**Rainfall Prediction**



• High likelihood of moderate rainfall (25 - 50 mm) is predicted for the North Western, Western, Central, and Sabaragamuwa provinces and less rainfall is predicted for the rest during 12 - 18 June.

**Monitored Rainfalls**



- On average 2.4 mm was received in SL and rainfall was concentrated in the western plains (6.2 mm) and hills (4.2 mm).
- Daily average rainfall in this week (2.4 mm) was lower than previous week (8.4 mm).
- Highest daily rainfall was in Kirindiwela on 8 June and Moraliya Oya on 9 June (80 mm).

**Monitored & Predicted Wind**



- From 29 May - 4 June, winds at 850mb (1.5km) north westerly, reaching up to 10 m/s.
- From 13 - 19 June, winds are predicted to be north westerly to south westerly, reaching up to 15 m/s.

**Monitored Sea & Land Temp**

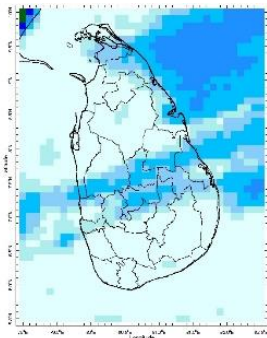


- Average land surface temperature was 31.5°C in the last week with warmer anomalies from seasonal average of +1°C to +3°C.
- Sea surface temperature around Sri Lanka was 0.25 - 1.0°C above normal.

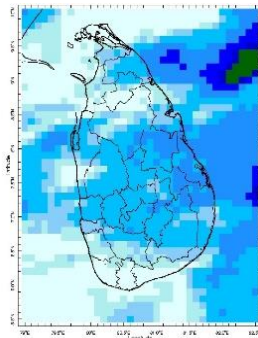
## Monitoring

### Rainfall

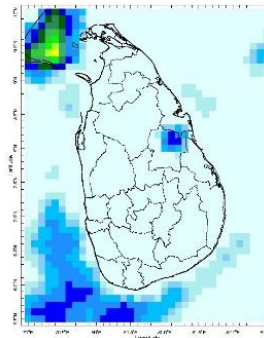
#### Daily Estimates for Rainfall from 4<sup>th</sup> June - 11<sup>th</sup> June 2024



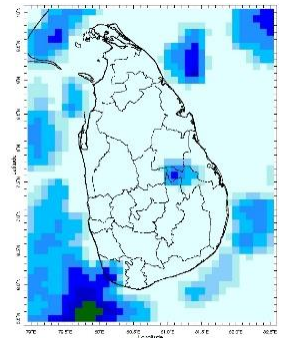
4 June



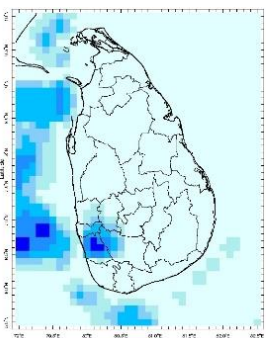
5 June



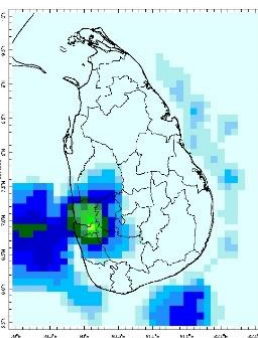
6 June



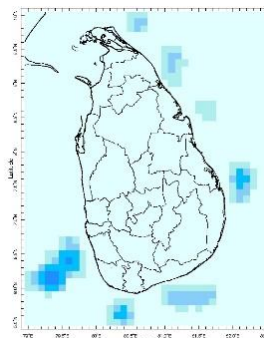
7 June



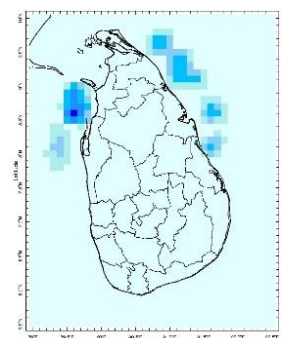
8 June



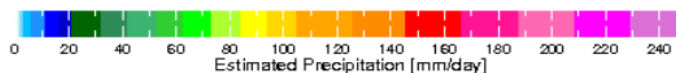
9 June



10 June



11 June



Federation for  
Environment, Climate  
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## Ocean State *(Text Courtesy IRI)*

### **Pacific sea state: June 10, 2024**

El Niño is transitioning toward ENSO-neutral. Equatorial sea surface temperatures (SSTs) are above average in the western and central Pacific Ocean, and below-average SSTs are emerging in east central and eastern Pacific Ocean. La Niña may develop in June-August 2024 (49% chance) or July-September (69% chance).

### **Indian Ocean State**

Sea surface temperature around Sri Lanka was 0.5°C above normal to the Northern and Eastern half of the country in 21<sup>st</sup> - 27<sup>th</sup> May 2024.

## Predictions

### Rainfall

#### **14 - Day prediction: NCEP GFS models**

**From 12<sup>th</sup> June - 18<sup>th</sup> June:**

Total rainfall by Provinces:

| Rainfall (mm) | Provinces                             |
|---------------|---------------------------------------|
| 45            | North Western                         |
| 35            | Western                               |
| 25            | Central, Sabaragamuwa                 |
| 15            | Southern                              |
| ≤ 5           | Northern, Eastern, Uva, North Central |

**From 19<sup>th</sup> June - 25<sup>th</sup> June:**

Total rainfall by Provinces:

| Rainfall (mm) | Provinces              |
|---------------|------------------------|
| 85            | North Western          |
| 65            | Western, Sabaragamuwa  |
| 55            | Southern, Central      |
| 35            | North Central          |
| ≤ 25          | Northern, Uva, Eastern |

## MJO based OLR predictions

### **For the next 15 days:**

MJO shall significantly suppress the rainfall during 12<sup>th</sup> June - 26<sup>th</sup> June for Sri Lanka.

## Interpretation

### Monitoring

**Rainfall:** During the last two weeks, there had been fairly heavy rainfall over the following areas: Kirindiwela (Gampaha), Moraliya Oya (Kegalle)

Daily Average Rainfall in the Met stations for previous week of (5<sup>th</sup> June - 12<sup>th</sup> June) = 2.4 mm

Maximum Daily Rainfall: 49.1 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 | 0.5                                   | 32.3                                     | 26.6    |
| Eastern hills   | 0.4                                   | 28.6                                     | 19.7    |
| Eastern plains  | 0.5                                   | 34.0                                     | 26.0    |
| Western hills   | 4.2                                   | 27.7                                     | 20.7    |
| Western plains  | 6.2                                   | 31.4                                     | 26.0    |
| Southern plains | 3.5                                   | 31.3                                     | 25.9    |

| Region          | Average rainfall for last 8 days (mm) | Daily maximum rainfall for last 8 days (mm) | Daily minimum rainfall for last 8 days (mm) |
|-----------------|---------------------------------------|---|---|
| All SL          | 2.4                                   | 49.1  | 0.0   |
| Hydro catchment | 3.1                                   | 40.0  | 0.0   |

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

**Temperatures:** The temperature anomalies were above normal for some parts of the Central and Uva provinces and below normal for some parts of the Eastern province driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (12<sup>th</sup> June - 18<sup>th</sup> June), moderate rainfall (25 - 50 mm) is predicted for the North Western, Western, Central, and Sabaragamuwa provinces and less rainfall is predicted for the rest.

**Temperatures:** The temperature will remain above normal for the Northern, Eastern, North Central and Uva provinces during 13<sup>th</sup> June - 19<sup>th</sup> June.

**Teleconnections:** MJO shall significantly suppress the rainfall during 12<sup>th</sup> June - 26<sup>th</sup> June for Sri Lanka.

**Seasonal Precipitation:** The precipitation forecast for the June-July-August, 2024 season shows a 50% or more tendency toward above normal precipitation for 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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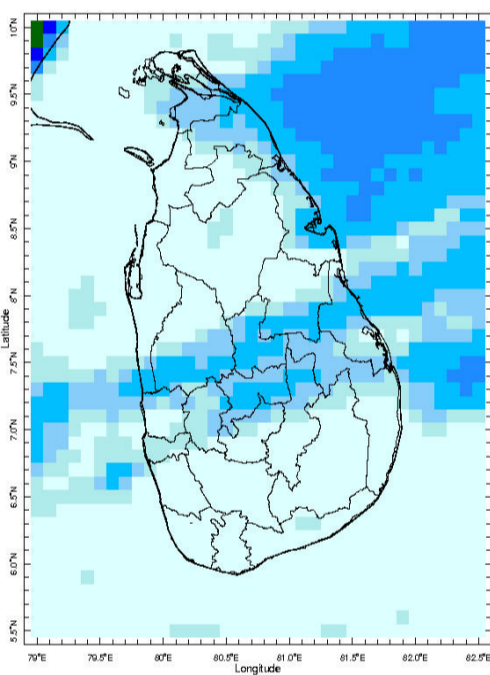
#### 2. Predictions

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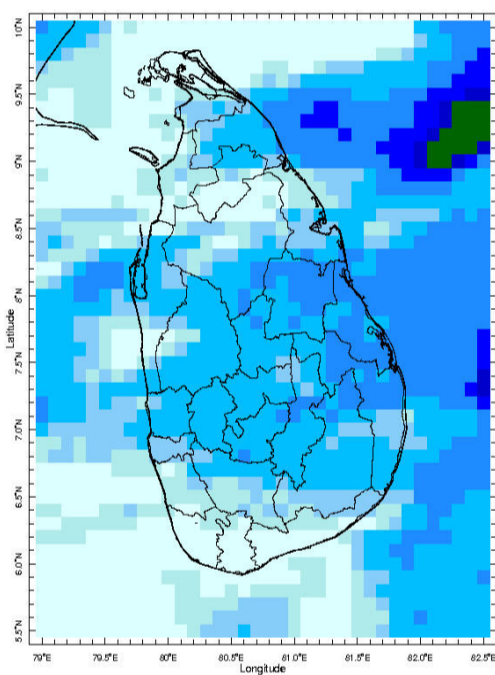
## MONITORING

### Daily Rainfall Monitoring

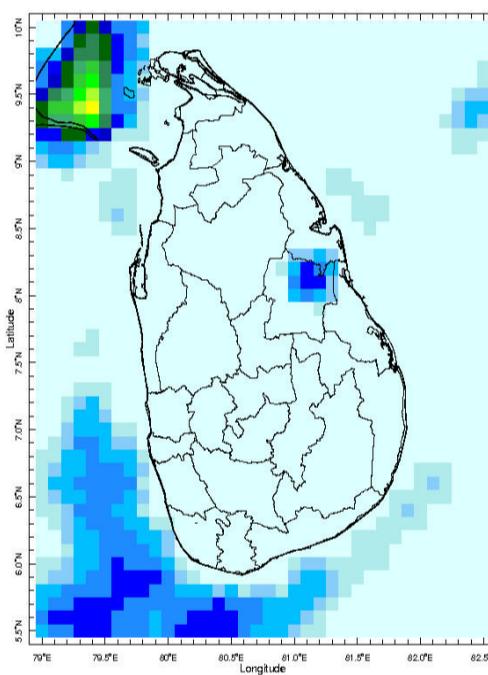
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



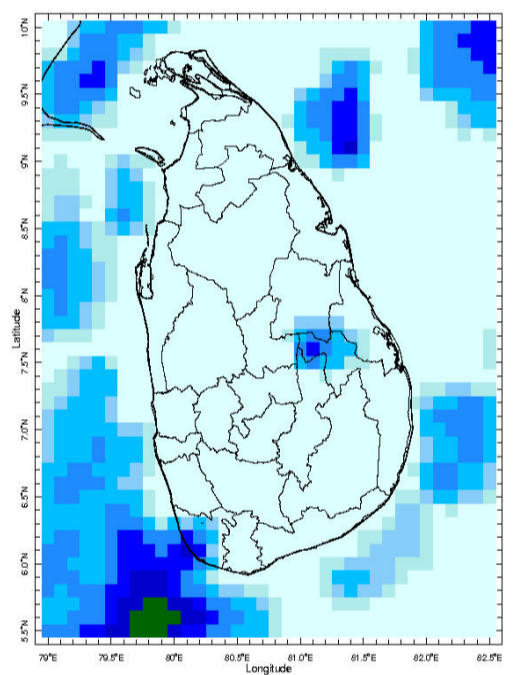
4 June 2024



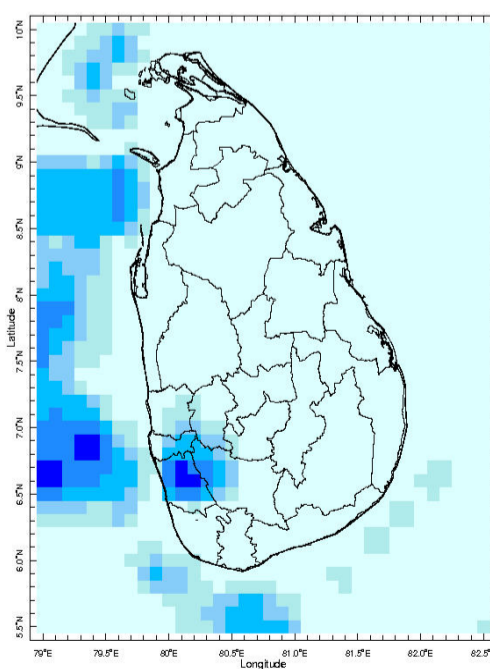
5 June 2024



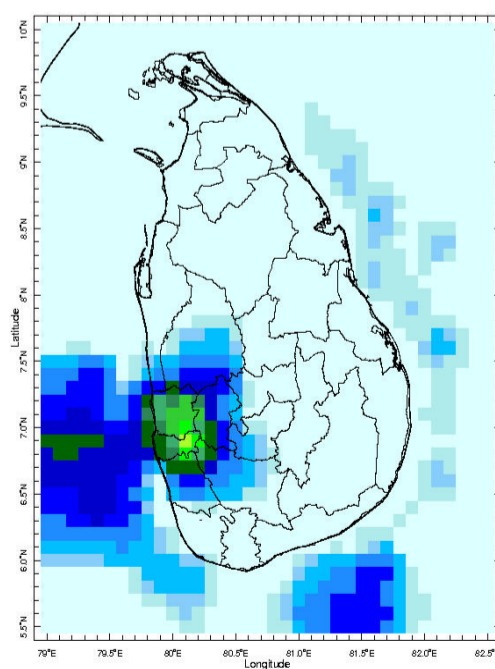
6 June 2024



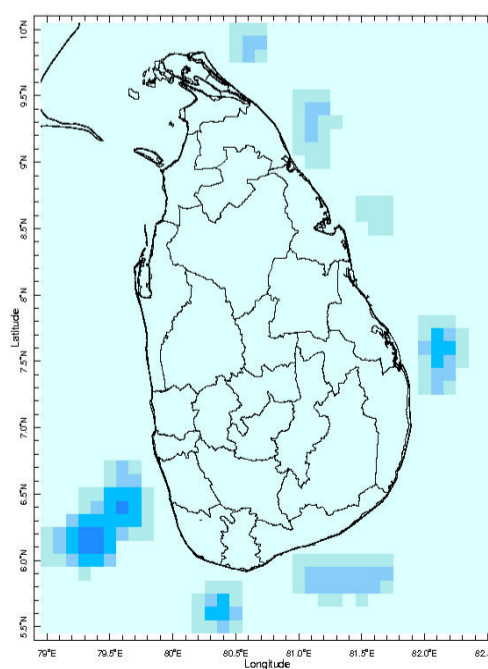
7 June 2024



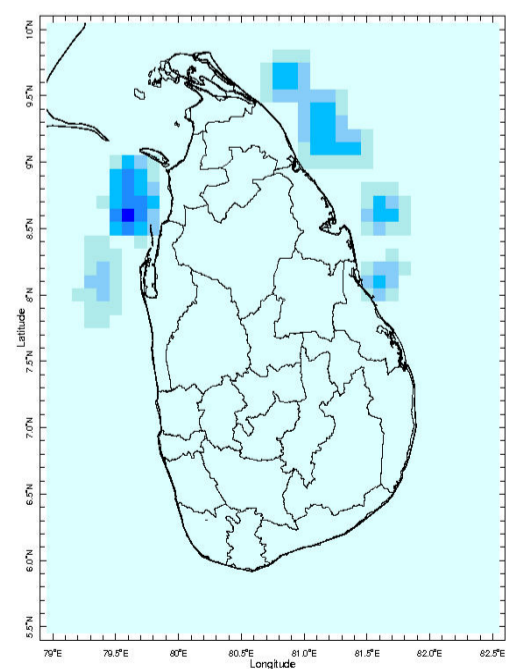
8 June 2024



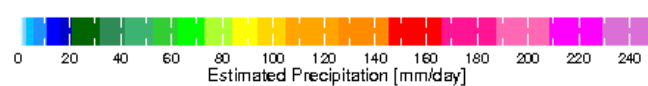
9 June 2024



10 June 2024

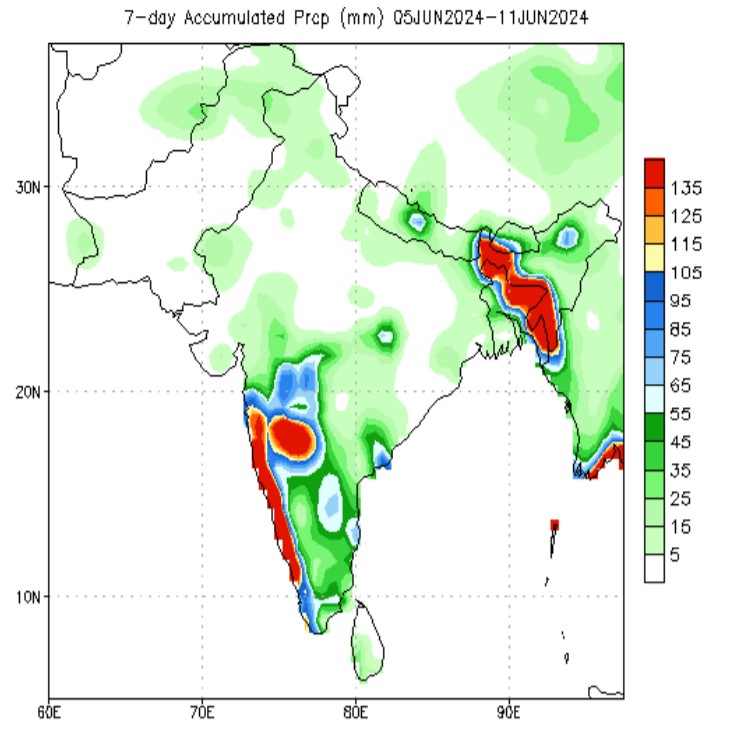


11 June 2024

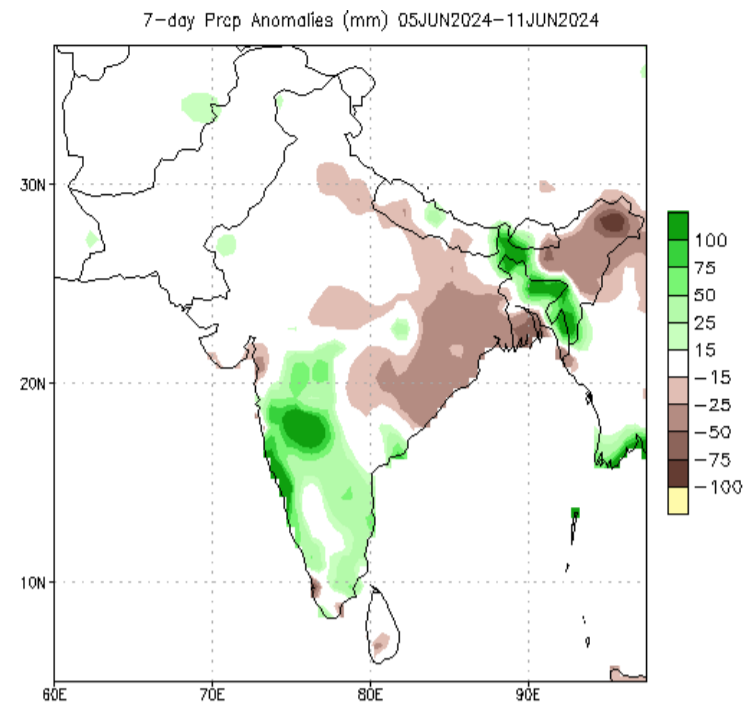


## Weekly Rainfall Monitoring

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.



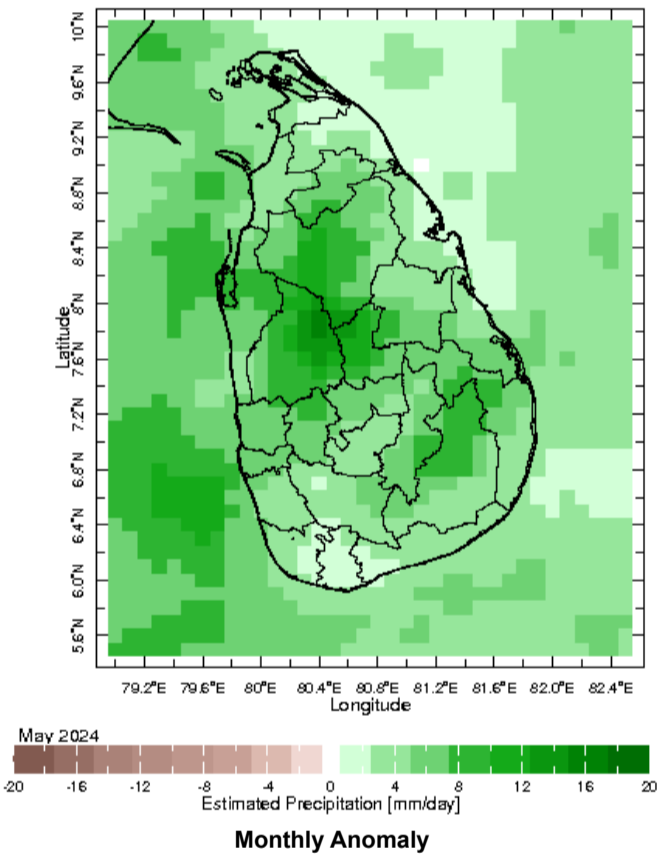
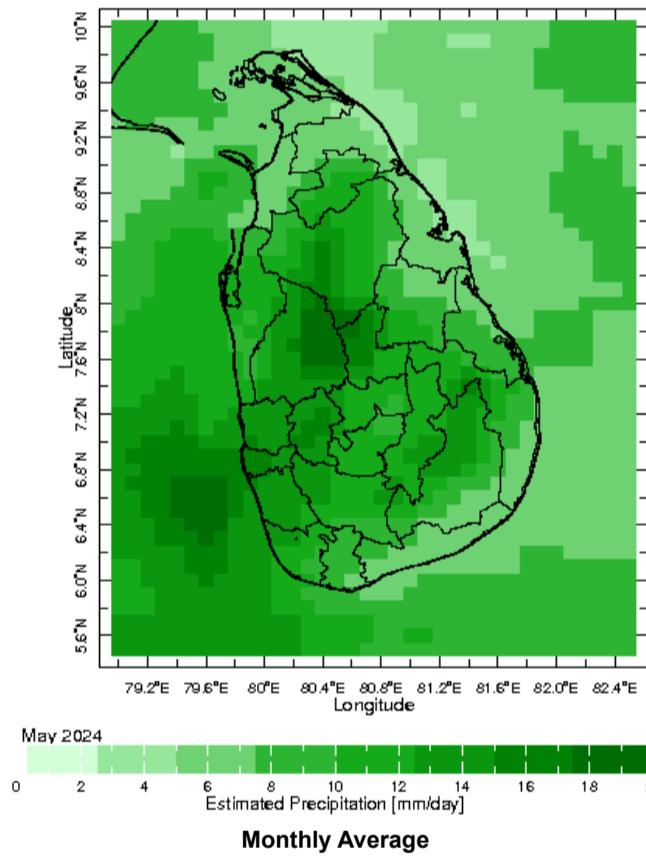
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



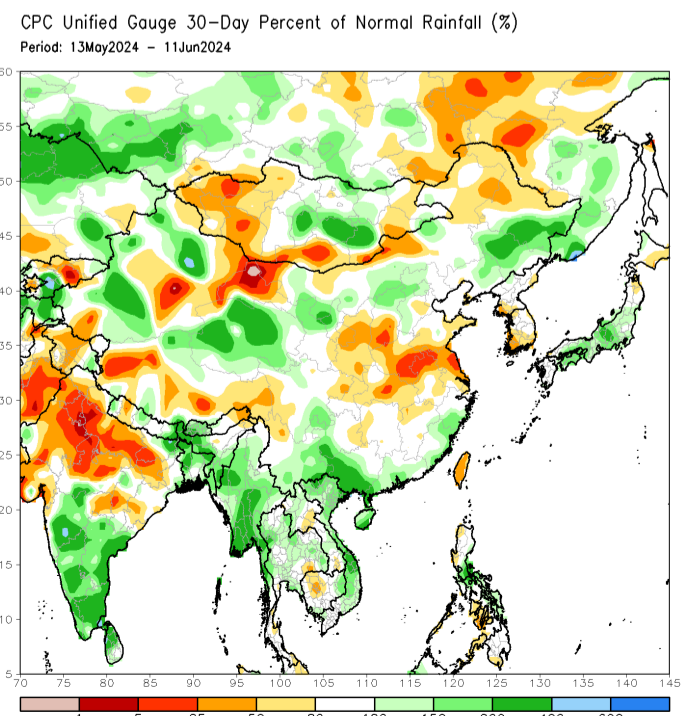
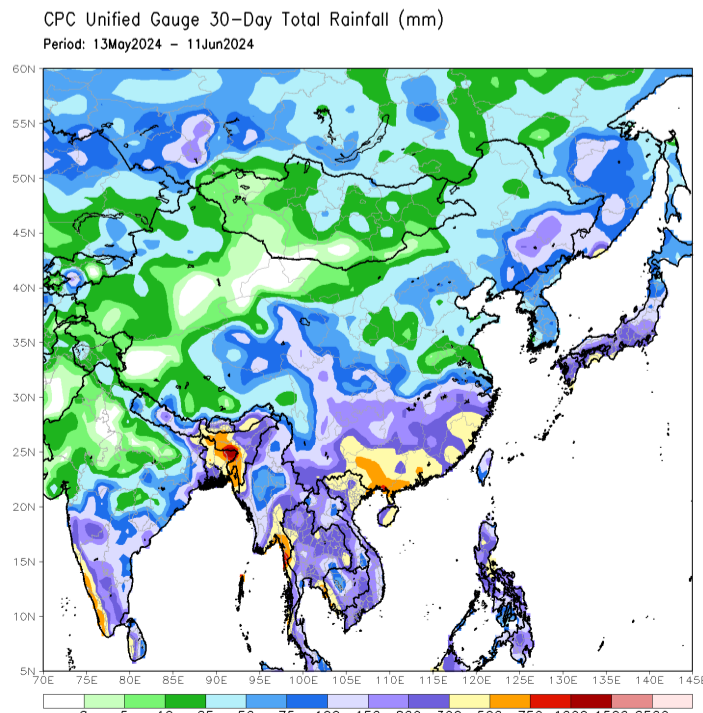
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

## Monthly Rainfall Monitoring

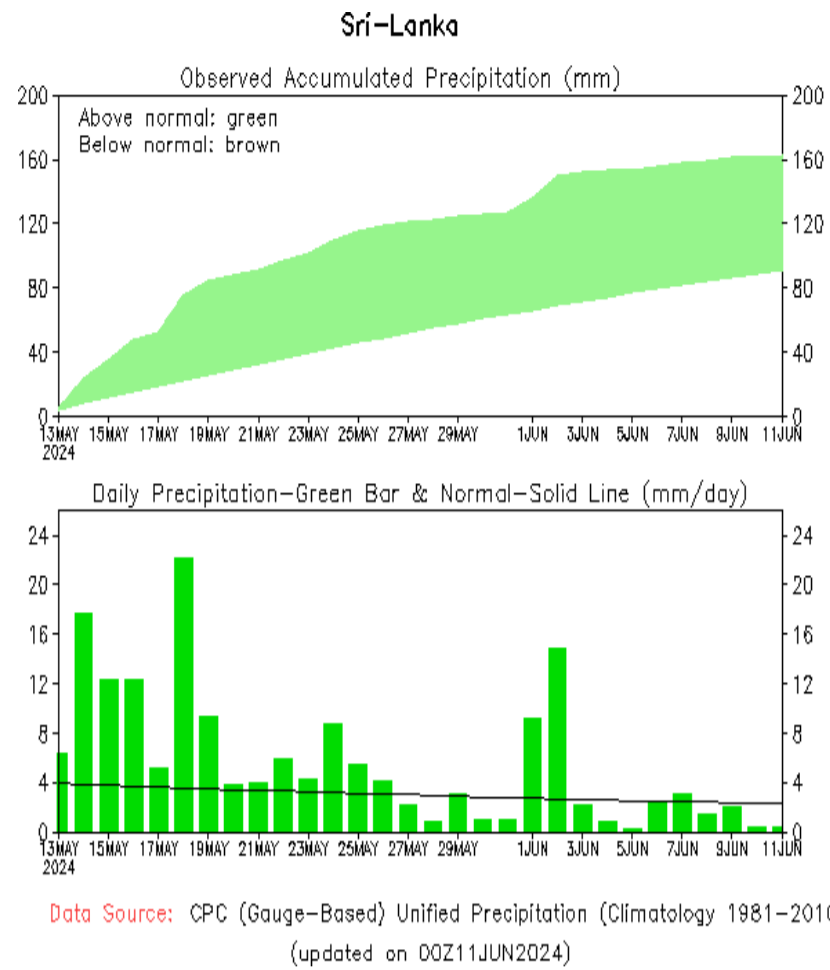
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



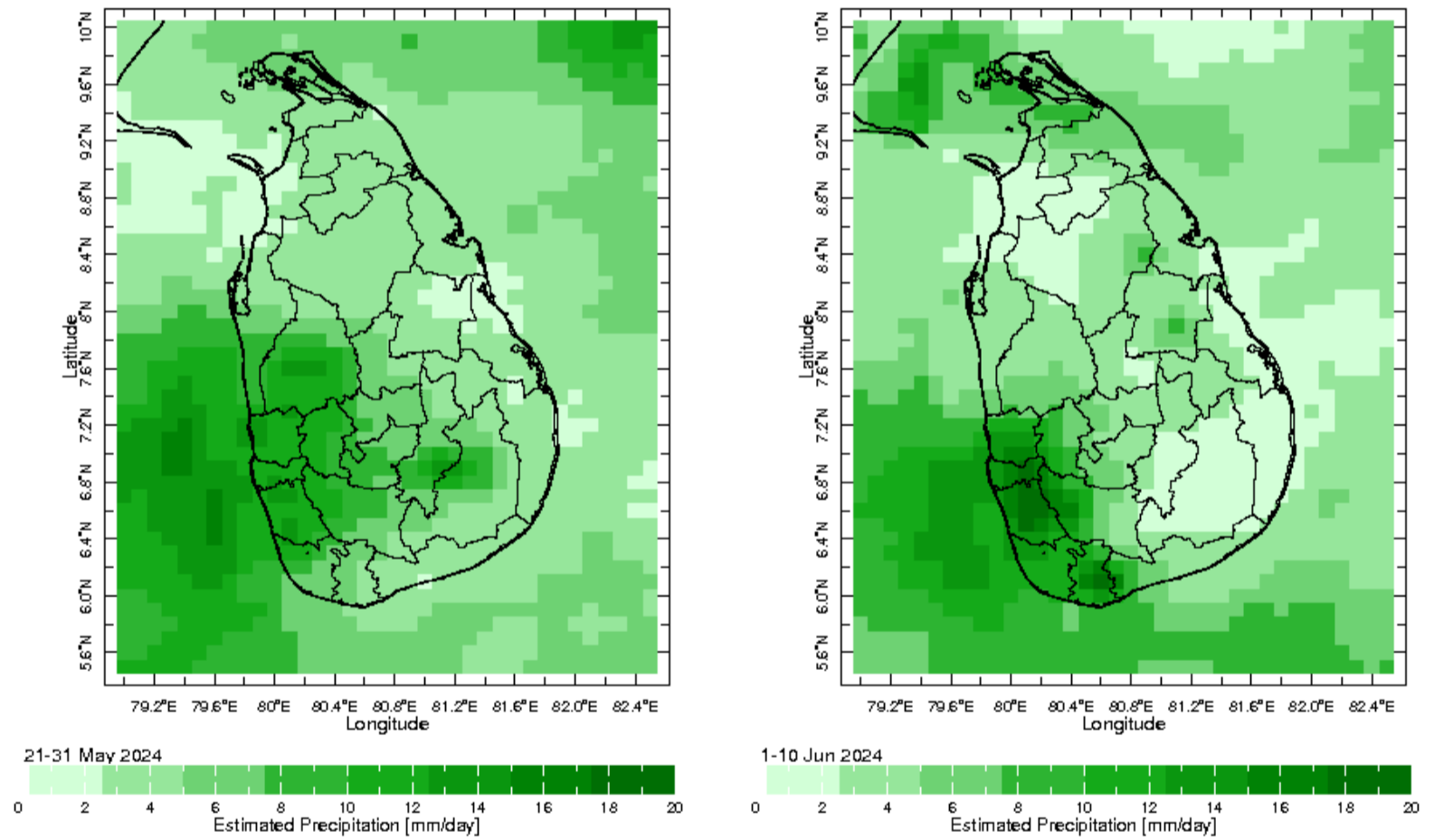
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



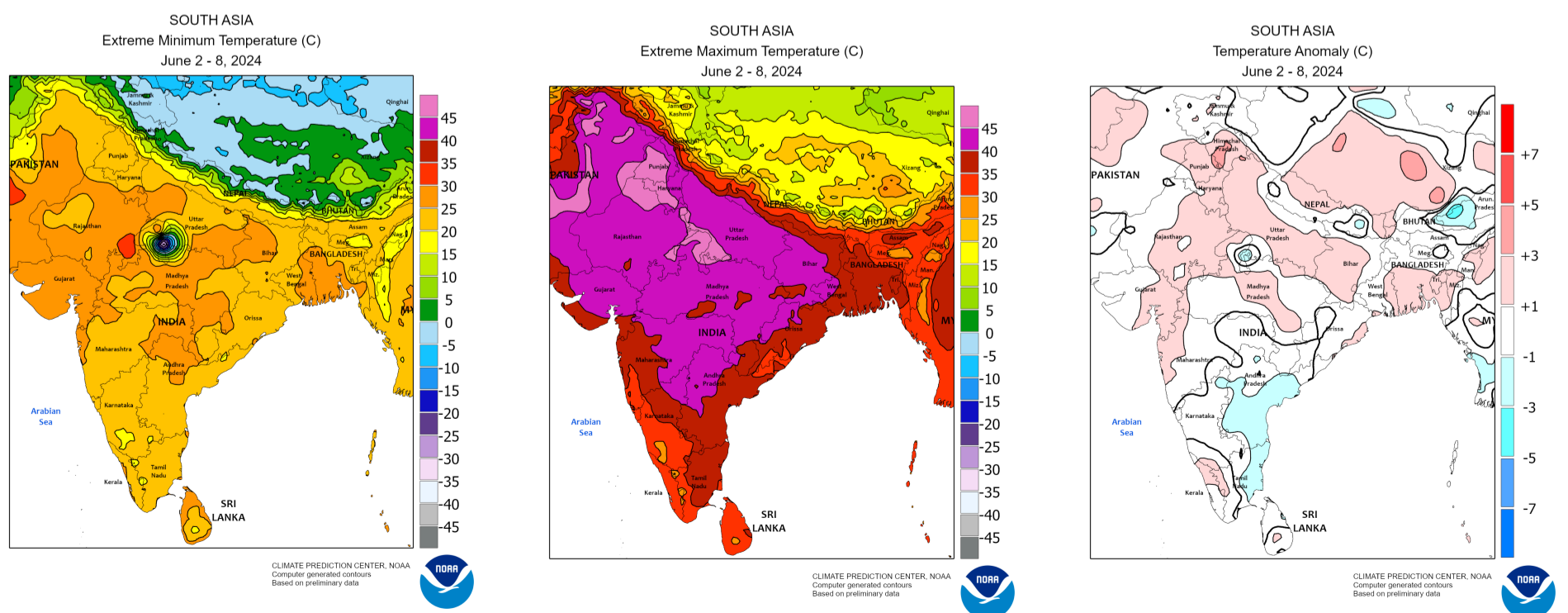
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



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

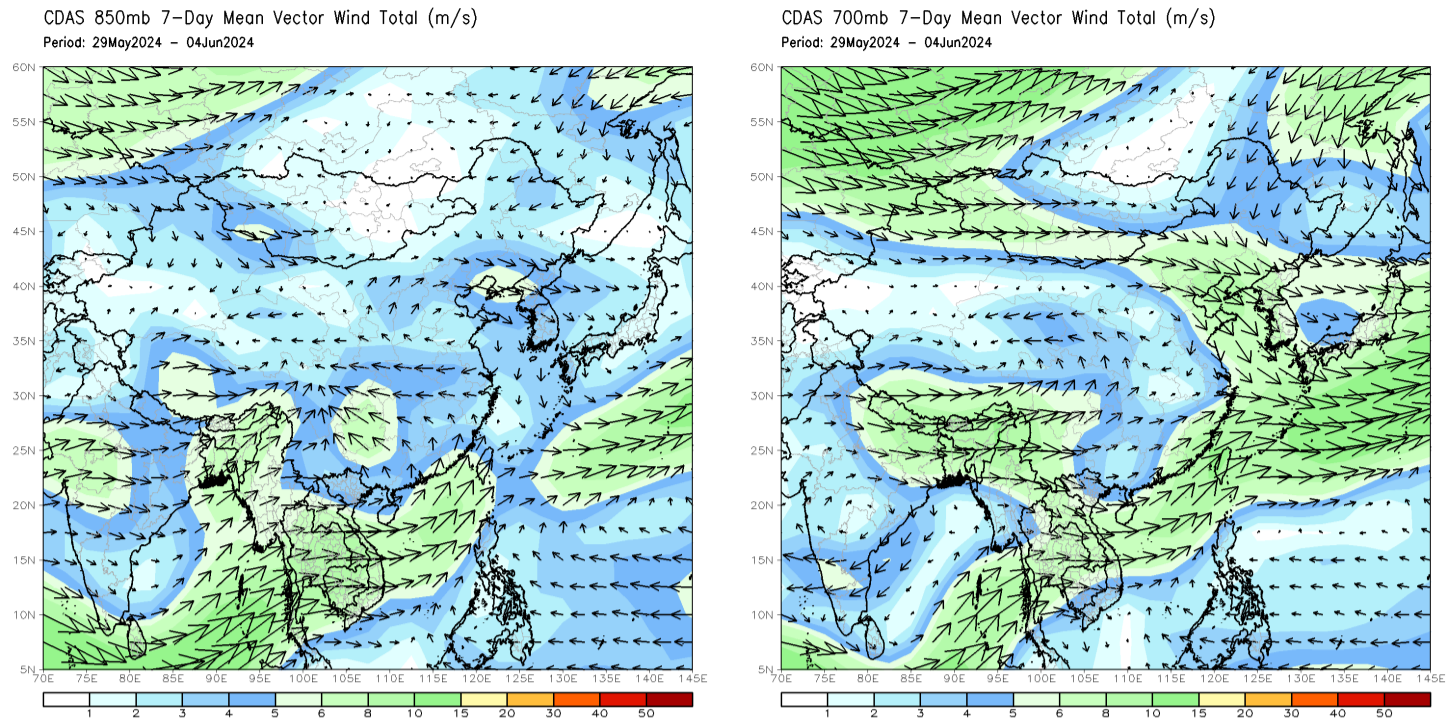


### Weekly Temperature Monitoring



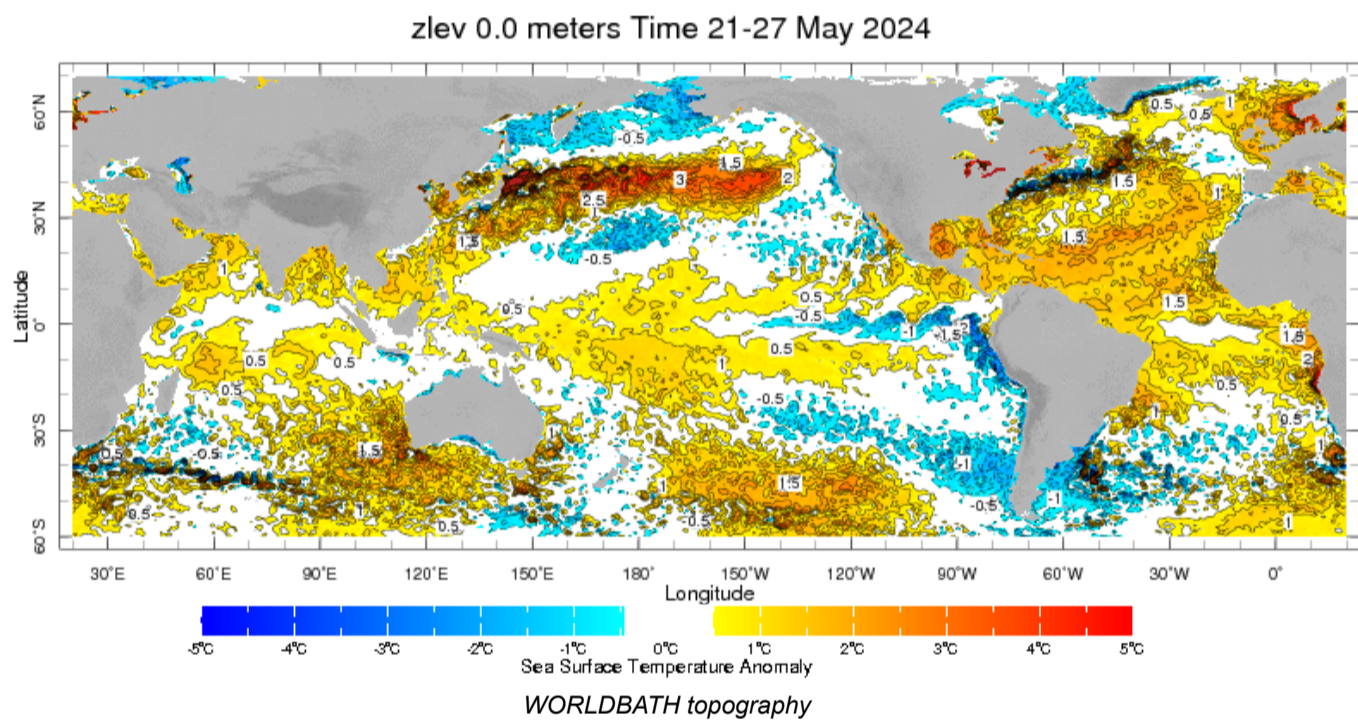
## Weekly Wind Monitoring

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.

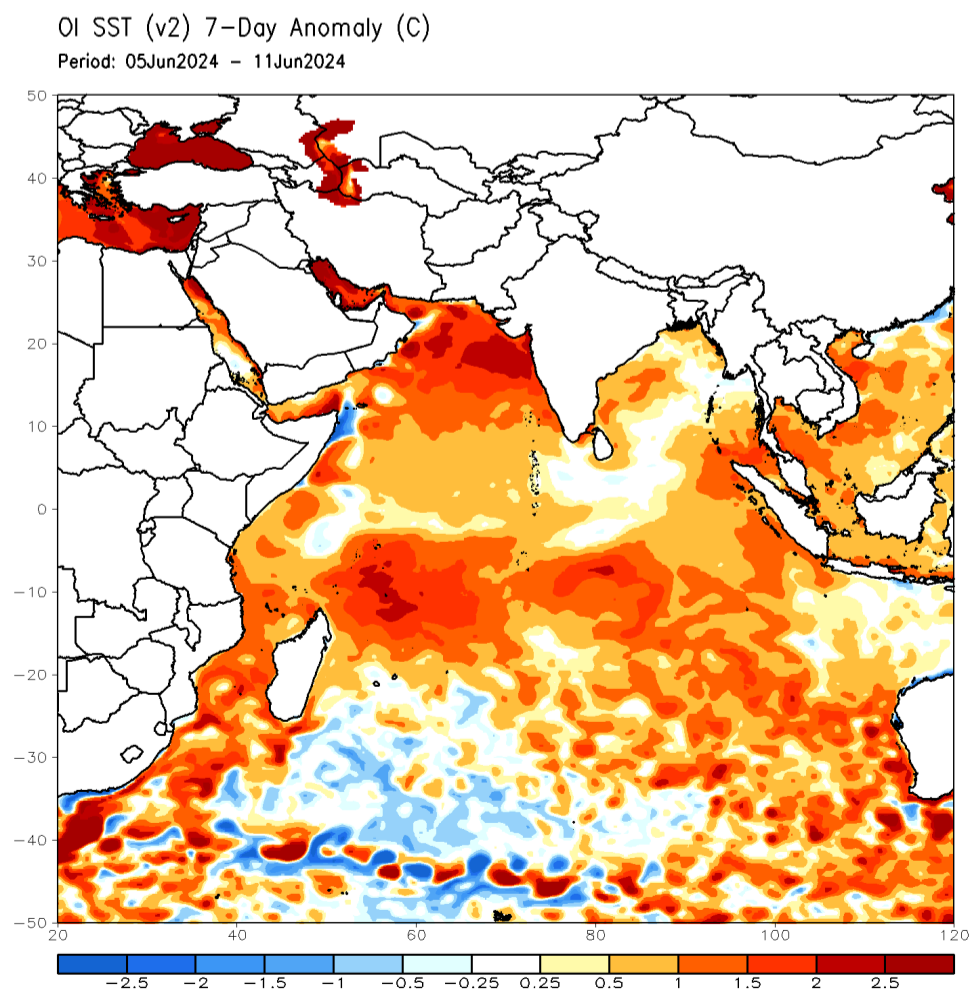


## Weekly Average SST Anomalies

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

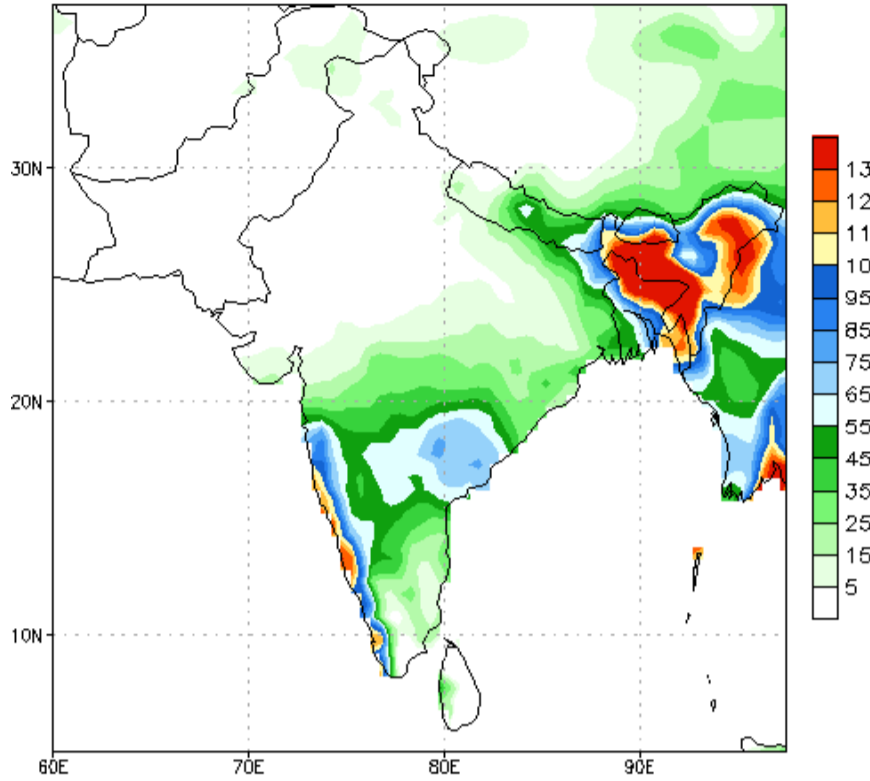


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



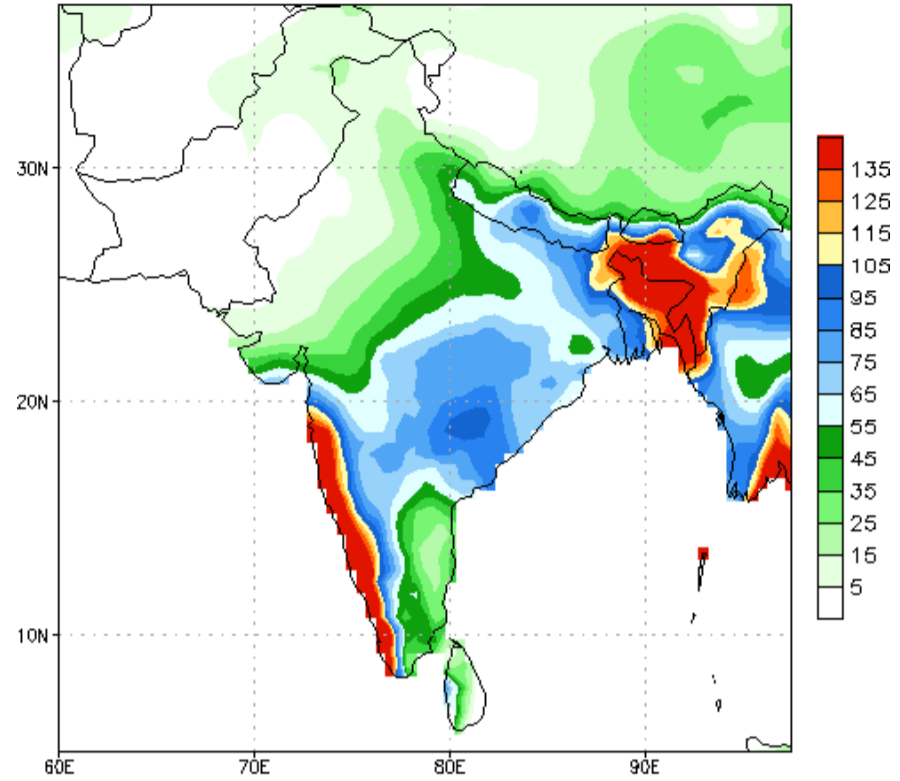
**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 12Jun2024  
12Jun2024-18Jun2024 Accumulation



Bias correction based on last 30-day forecast error

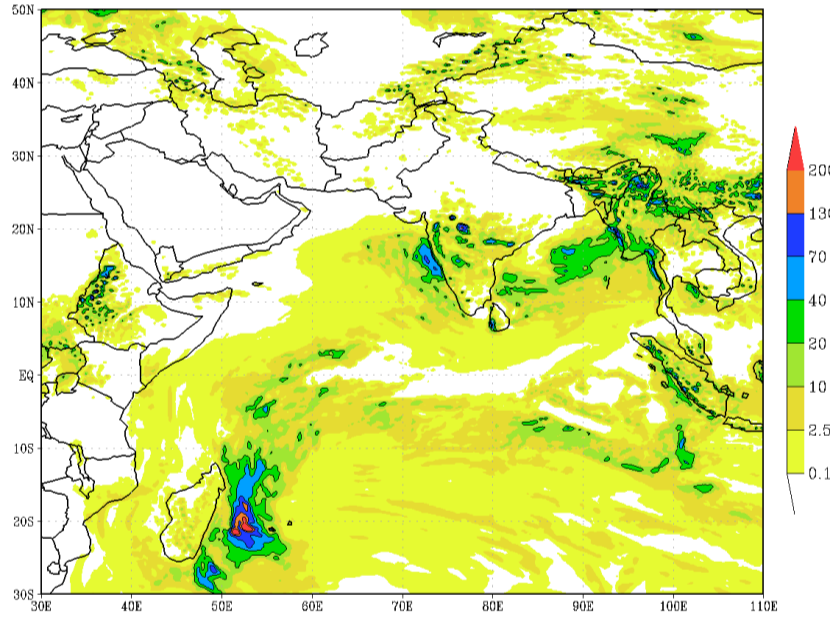
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 12Jun2024  
19Jun2024-25Jun2024 Accumulation



Bias correction based on last 30-day forecast error

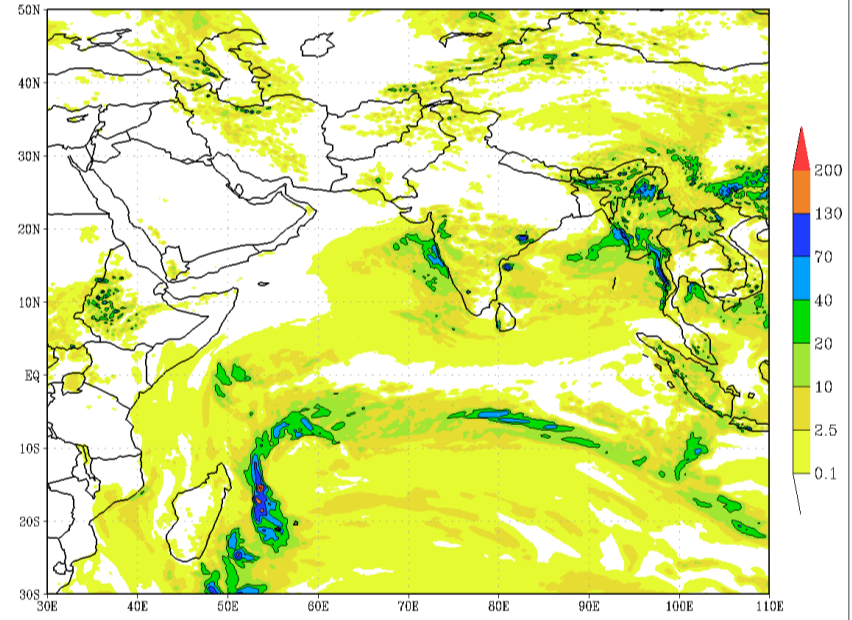
**IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India**

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)  
based on 00 UTC of 12-06-2024 valid for 03 UTC of 13-06-2024



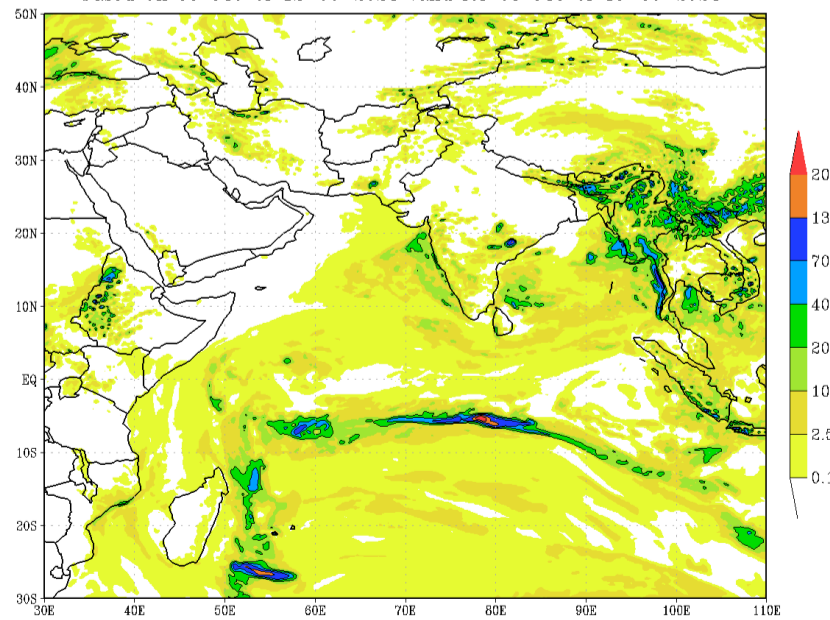
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)  
based on 00 UTC of 12-06-2024 valid for 03 UTC of 14-06-2024



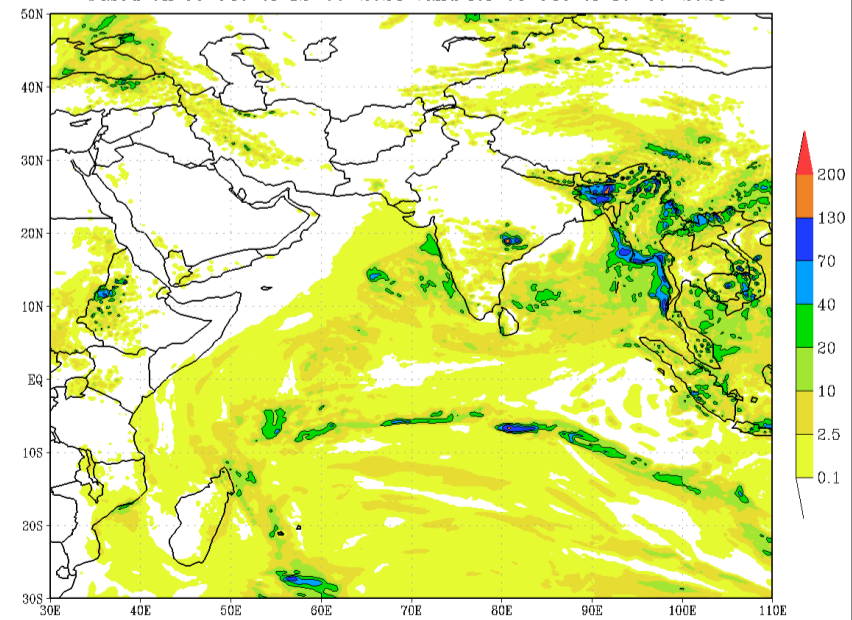
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)  
based on 00 UTC of 12-06-2024 valid for 03 UTC of 15-06-2024



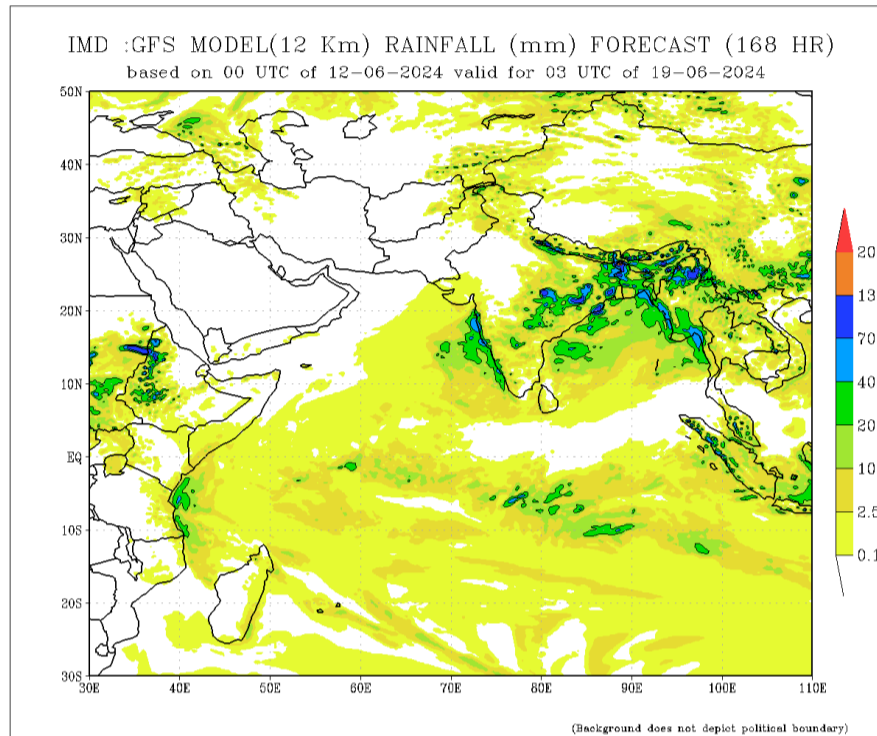
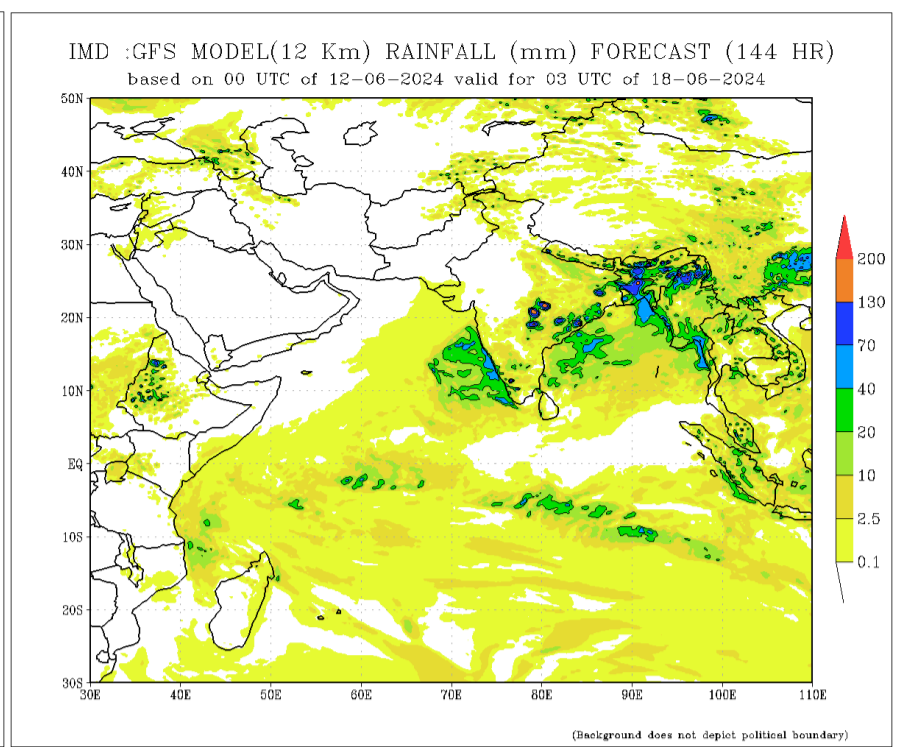
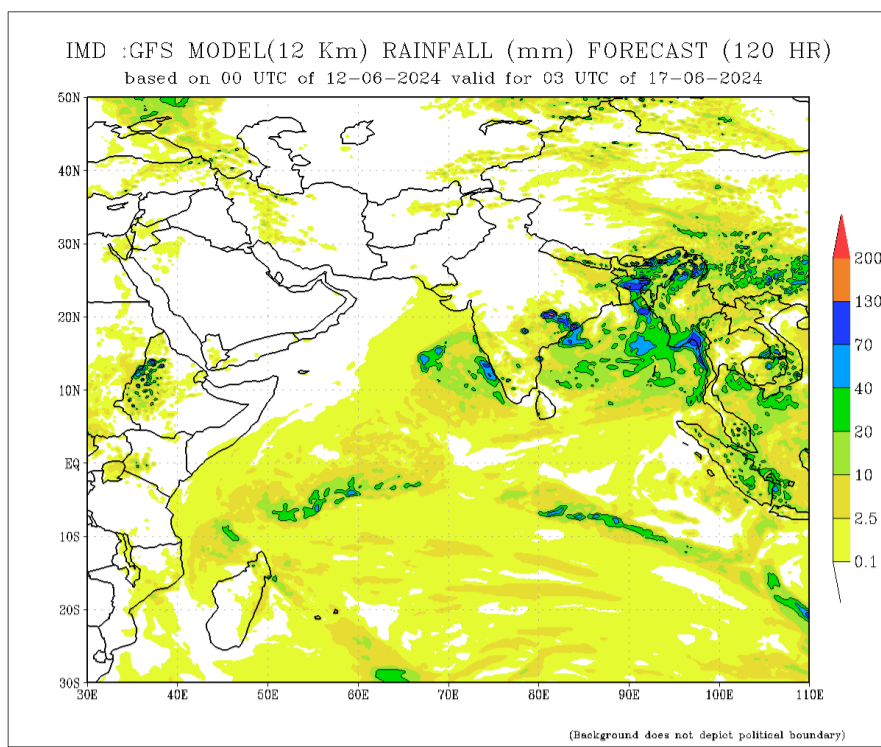
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)  
based on 00 UTC of 12-06-2024 valid for 03 UTC of 16-06-2024



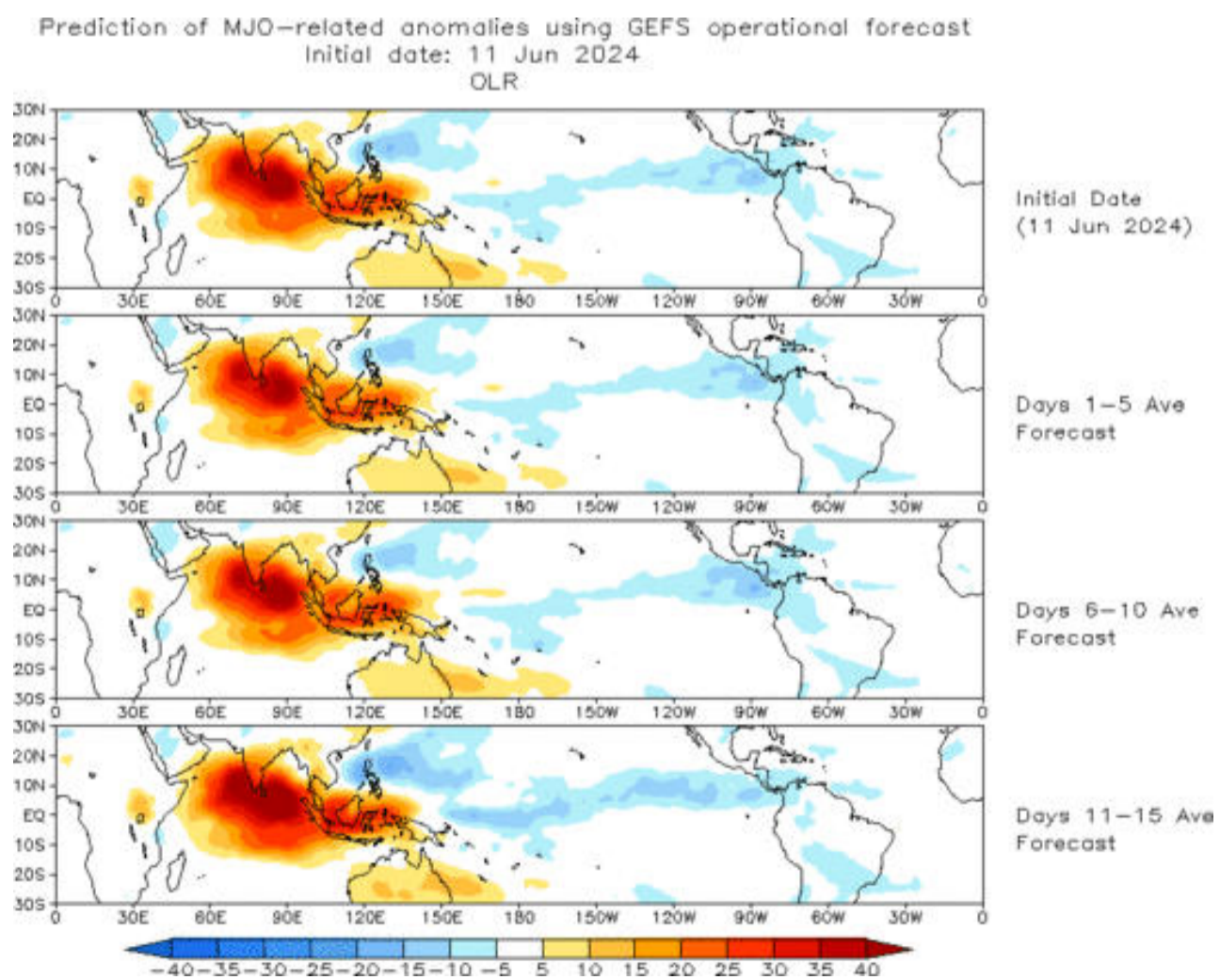
(Background does not depict political boundary)





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

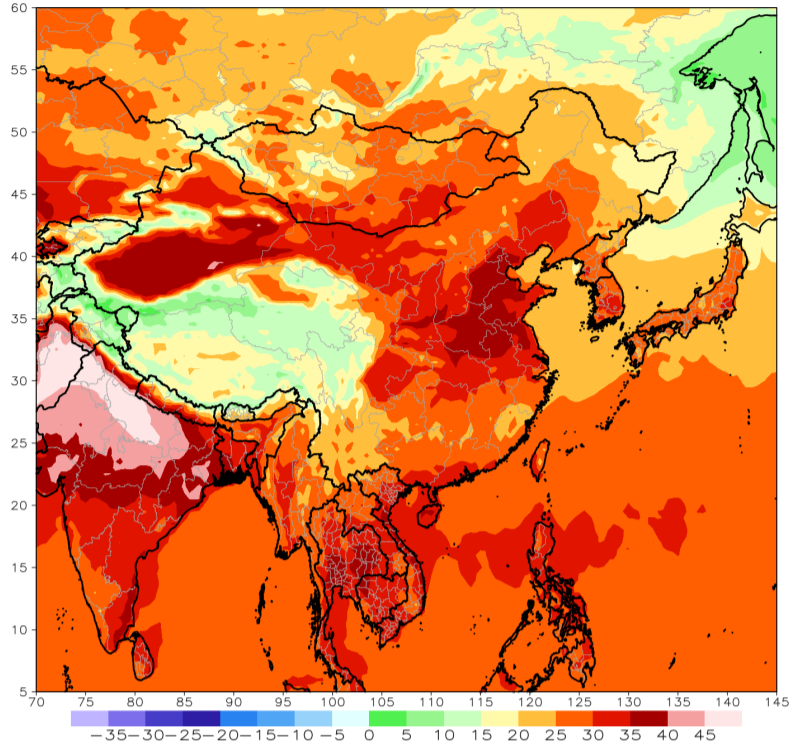
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



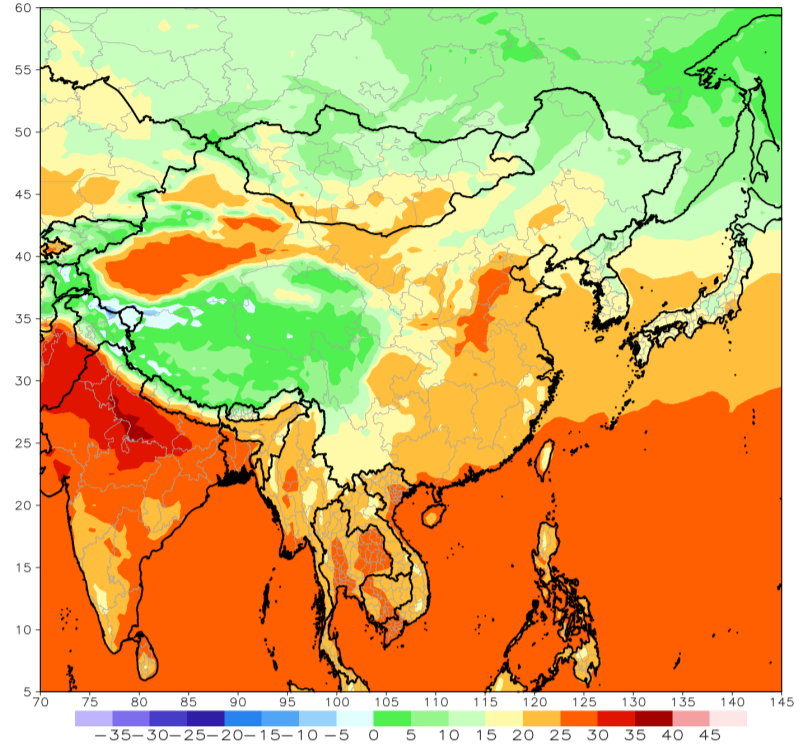
## Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)  
Period: 18z13Jun2024 - 18z19Jun2024



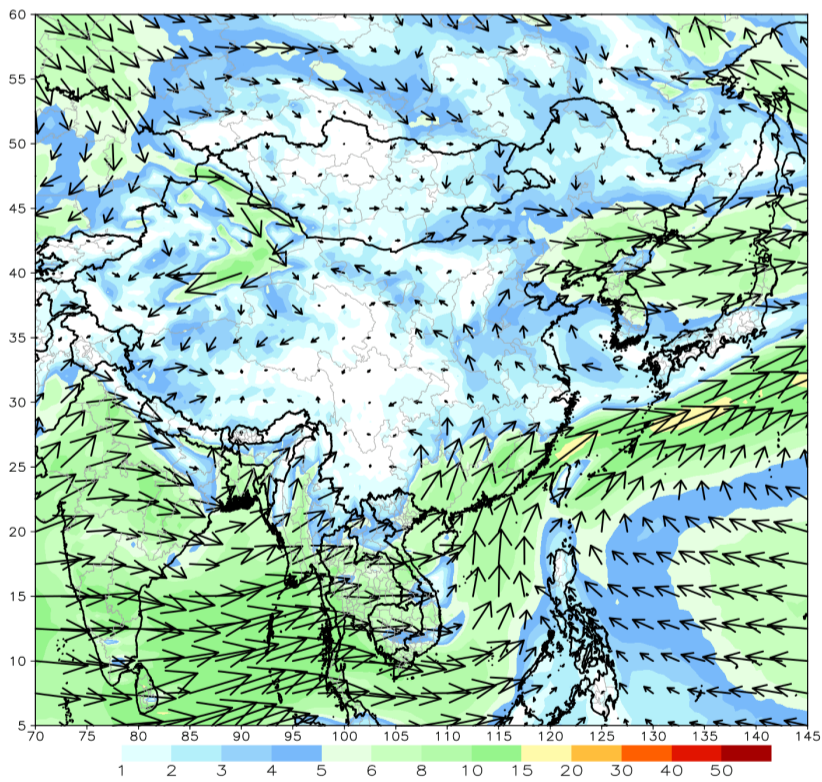
GFS week1 Temperature Min (C)  
Period: 18z13Jun2024 - 18z19Jun2024



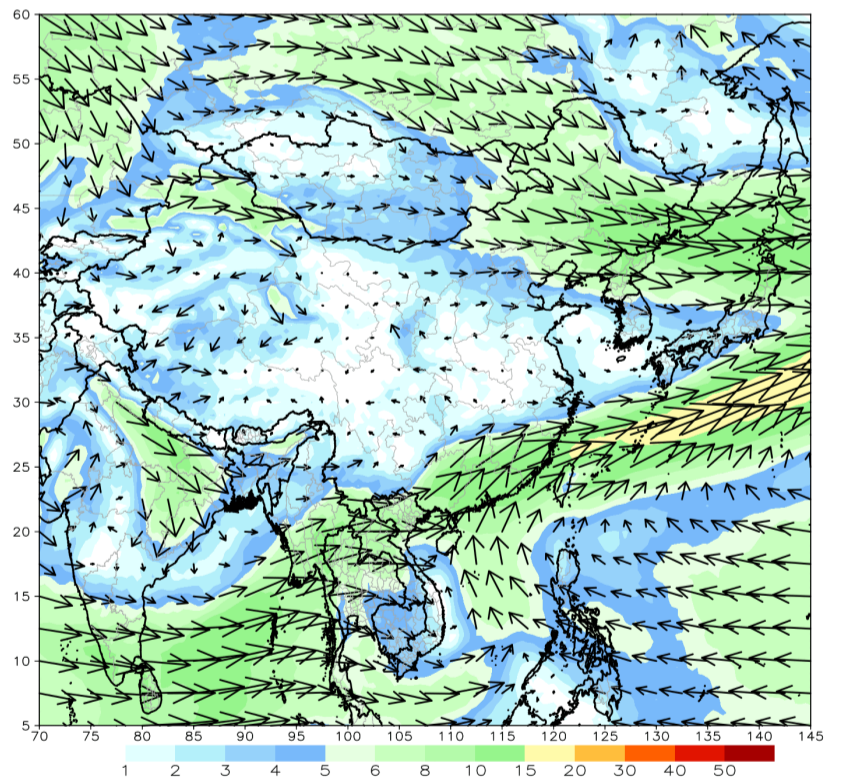
## Weekly Wind Forecast

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

GFS 850mb week1 Mean Vector Wind Total (m/s)  
Period: 18z13Jun2024 - 18z19Jun2024



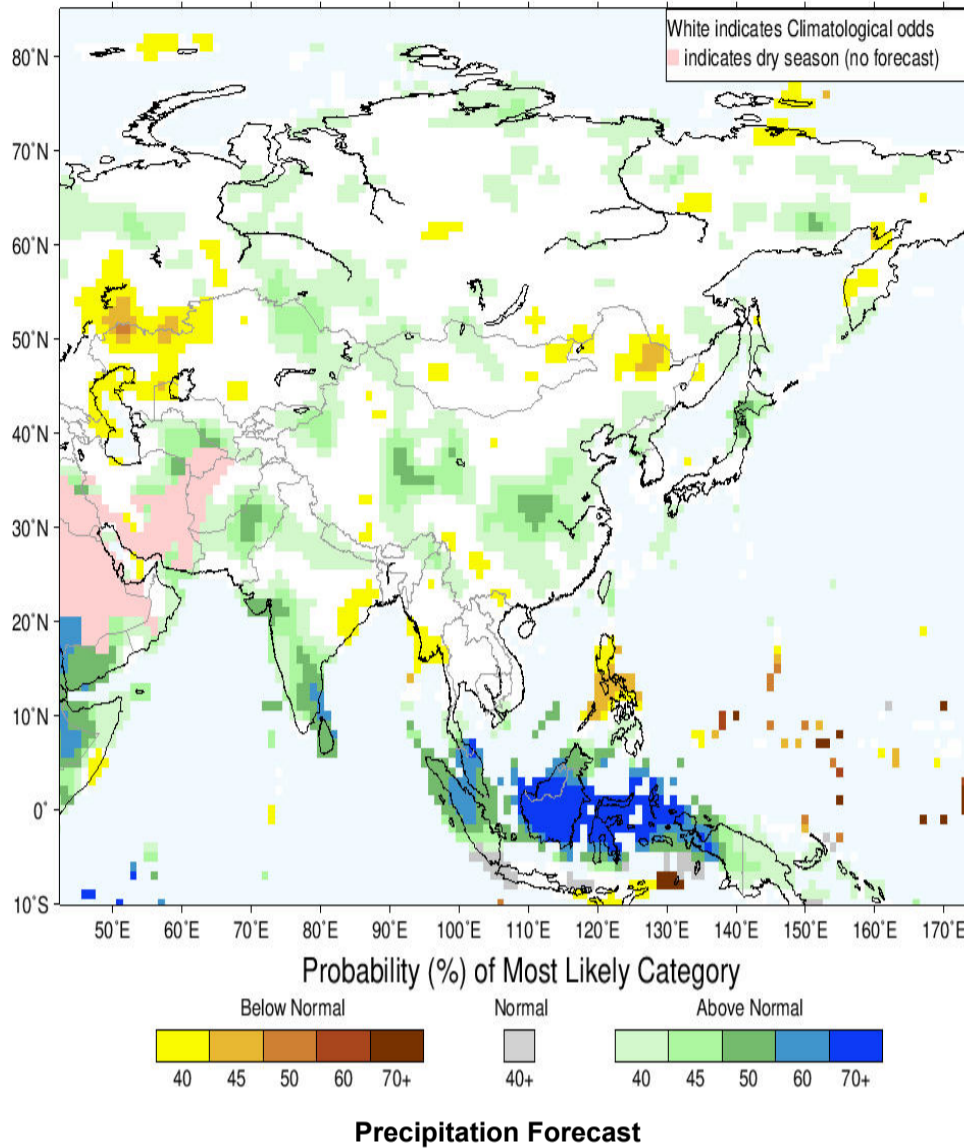
GFS 700mb week1 Mean Vector Wind Total (m/s)  
Period: 18z13Jun2024 - 18z19Jun2024



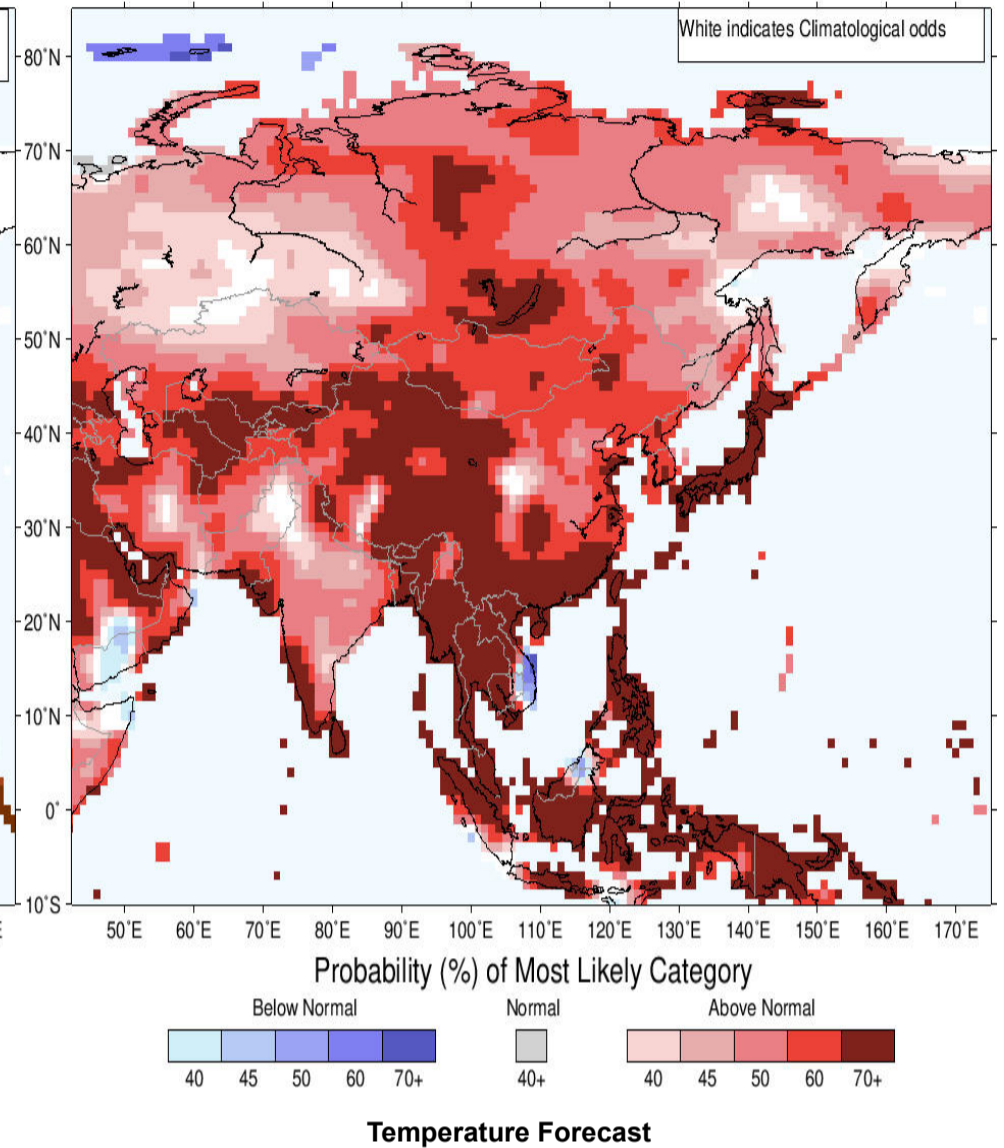
## Seasonal Rainfall and Temperature Forecast

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 June-July-August 2024, Issued May 2024



IRI Multi-Model Probability Forecast for Temperature for June-July-August 2024, Issued May 2024



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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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