

26 APRIL  
2024

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



- High likelihood of moderate rainfall (25 - 50mm) is predicted for Western, Sabaragamuwa and Central provinces and less rainfall (< 20 mm) is predicted for the rest during 24 April - 1 May.

Monitored Rainfalls



- On average, only 3/5 of expected rainfall was received over the Sri Lanka during 25 Mar - 23 April.
- Average rainfall for SL was 2.6mm and for the hydro-catchment areas was 2.3mm.

Monitored & Predicted Wind



- Winds at 850mb (1.5 km) were south easterly from 16 - 22 Apr reaching up to 3 m/s.
- Winds at 850mb (1.5 km) are predicted south easterly from 25 Apr - 1 May reaching up to 2 m/s.

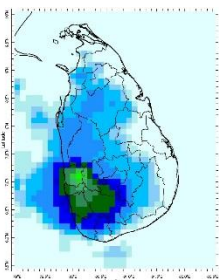
Monitored Sea & Land Temp



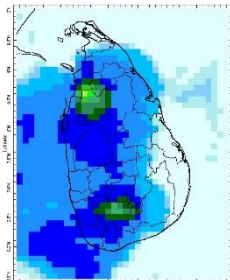
- Average land surface temperature was 33.9°C in the last week and warmer anomalies of +1-3°C were higher in the western slopes and coast compared to the northern and southern regions.
- The temperature in SL has peaked for the year.

Monitoring  
Rainfall

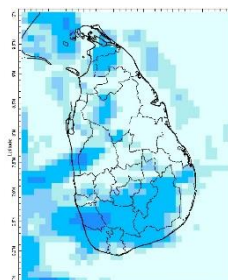
Daily Estimates for Rainfall from 1<sup>st</sup> April - 8<sup>th</sup> April 2024



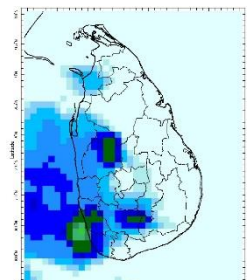
1 April



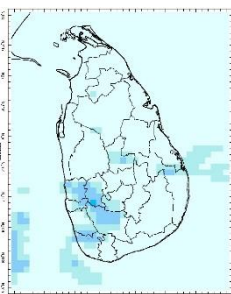
2 April



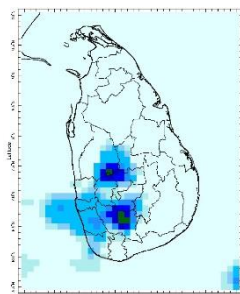
3 April



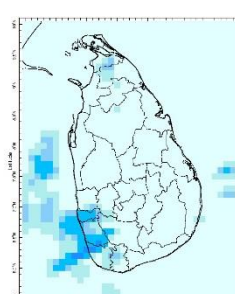
4 April



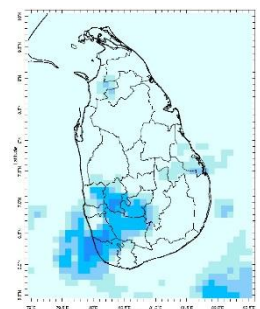
5 April



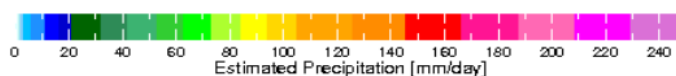
6 April



7 April



8 April



Federation for  
Environment, Climate  
& Technology

**Federation for Environment, Climate and Technology**  
 c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.  
 Phone (+94) 81-2376746, (+94) 81-2300415  
 Web Site: [www.fect.lk](http://www.fect.lk) E mail: [info@fect.lk](mailto:info@fect.lk) LI: [www.linkedin.com/in/fectlk](http://www.linkedin.com/in/fectlk)  
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## Ocean State (Text Courtesy IRI)

### **Pacific sea state: April 22, 2024**

The SST Anomalies for the NINO3.4 region show a +1.2 °C on the week ending 22<sup>nd</sup> April, and a weak El Niño 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 1.0°C above normal to the country in 2<sup>nd</sup> - 8<sup>th</sup> April 2024.

## Predictions

### Rainfall

#### **1 - 7 Day prediction: IMD GFS models**

**From 25<sup>th</sup> April - 1<sup>st</sup> May:**

Total rainfall by Provinces:

Rainfall (mm)	Provinces
20 - 40	Western, Sabaragamuwa, Central
10 - 20	Southern, North Central
< 10	North Western, Northern, Eastern, Uva

### MJO based OLR predictions

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

MJO shall near neutral the rainfall during 15<sup>th</sup> - 29<sup>th</sup> April for Sri Lanka.

## Interpretation

### Monitoring

**Rainfall:** During the last two weeks, there had been heavy rainfall over the following area: Neboda.

Daily Average Rainfall in the Met stations for previous week of (17<sup>th</sup> April - 24<sup>th</sup> April) = 2.6 mm  
Maximum Daily Rainfall: 53.7 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	0.6	35.4	26.6
Eastern hills	0.3	29.7	19.8
Eastern plains	0.0	34.7	26.0
Western hills	3.3	31.7	19.9
Western plains	9.6	33.6	26.1
Southern plains	0.0	34.3	26.3

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	2.3	49.5	0.0

**Wind:** South 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 North Western, Western, Sabaragamuwa, Central, North Central, and Eastern provinces of the country, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (25<sup>th</sup> April - 1<sup>st</sup> May), moderate rainfall (25 - 50 mm) is predicted for the Western, Sabaragamuwa, and Central provinces and less rainfall (< 20 mm) is predicted for the rest.

**Temperatures:** The temperature will remain above normal for some parts of the Northern, North Central, Uva, Eastern, and North Western provinces during 25<sup>th</sup> April – 1<sup>st</sup> May.

**Teleconnections:** MJO shall near neutral the rainfall during 15<sup>th</sup> - 29<sup>th</sup> April for Sri Lanka.

**Seasonal Precipitation:** The precipitation forecast for the May-June-July, 2024 season shows a 70% 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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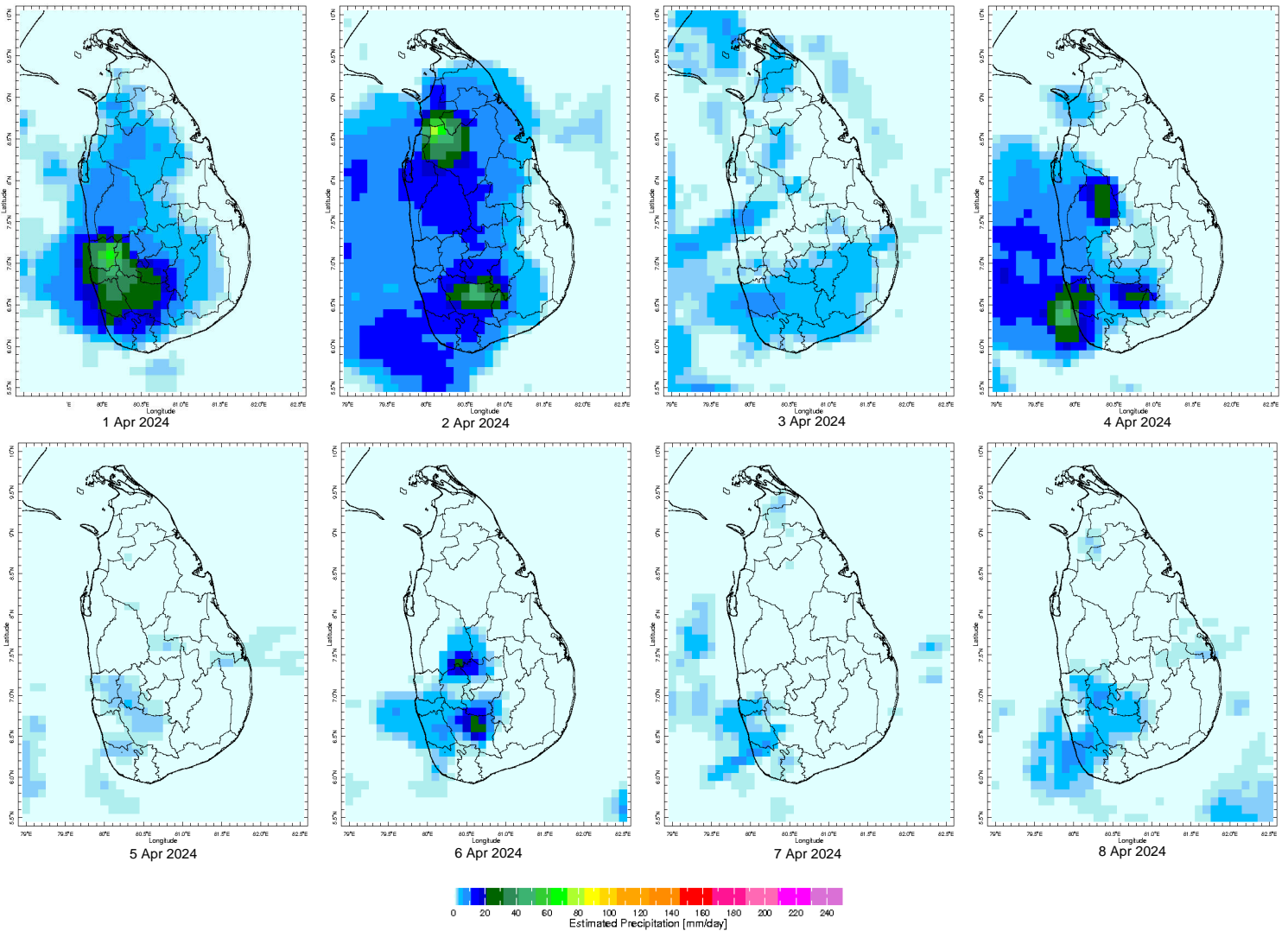
#### 2. Predictions

- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
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## MONITORING

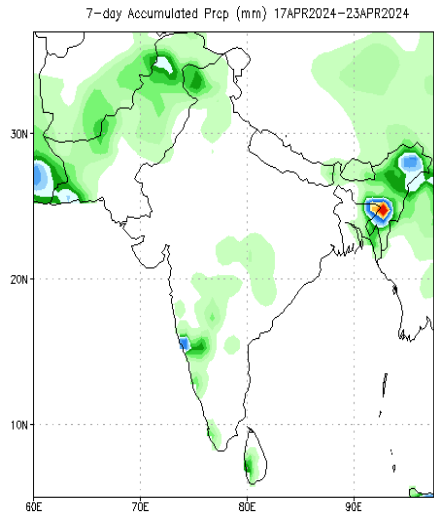
### Daily Rainfall Monitoring

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

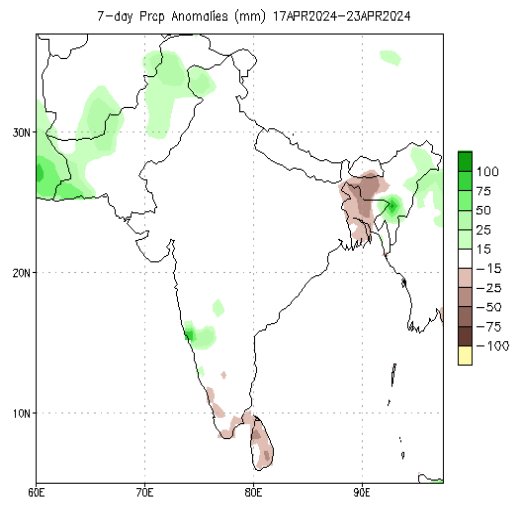


## Weekly Rainfall Monitoring

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.



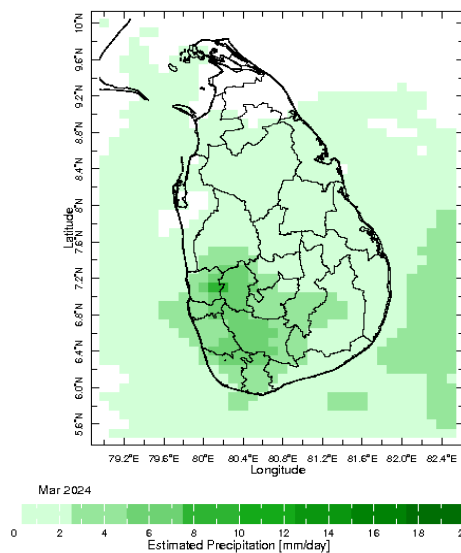
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



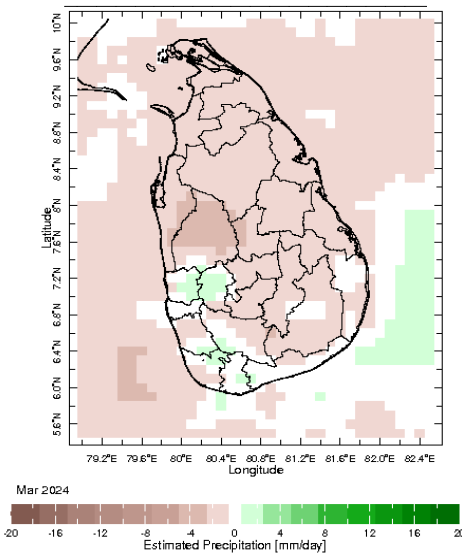
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis' Climatology (1991-2020)

## 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

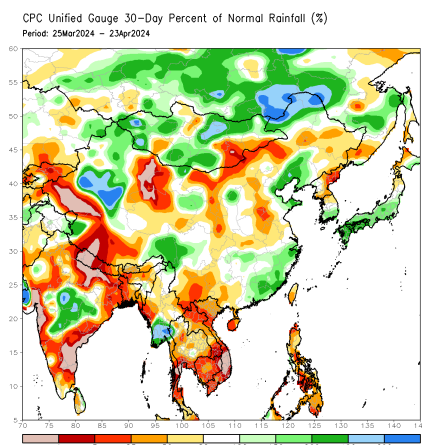
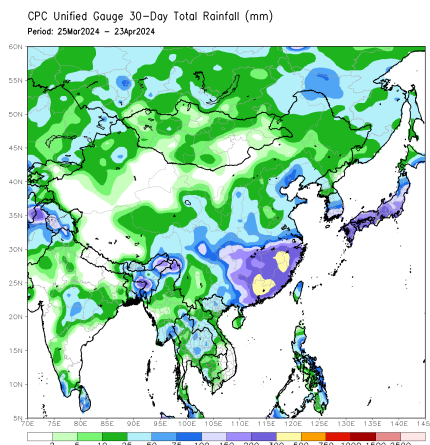


Monthly Average

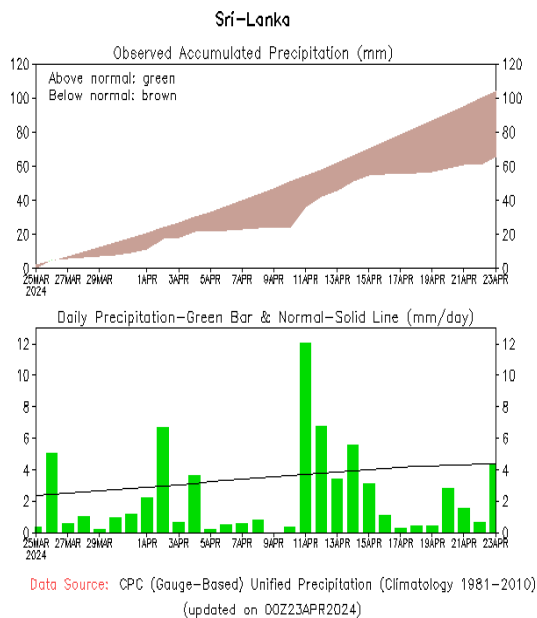


Monthly Anomaly

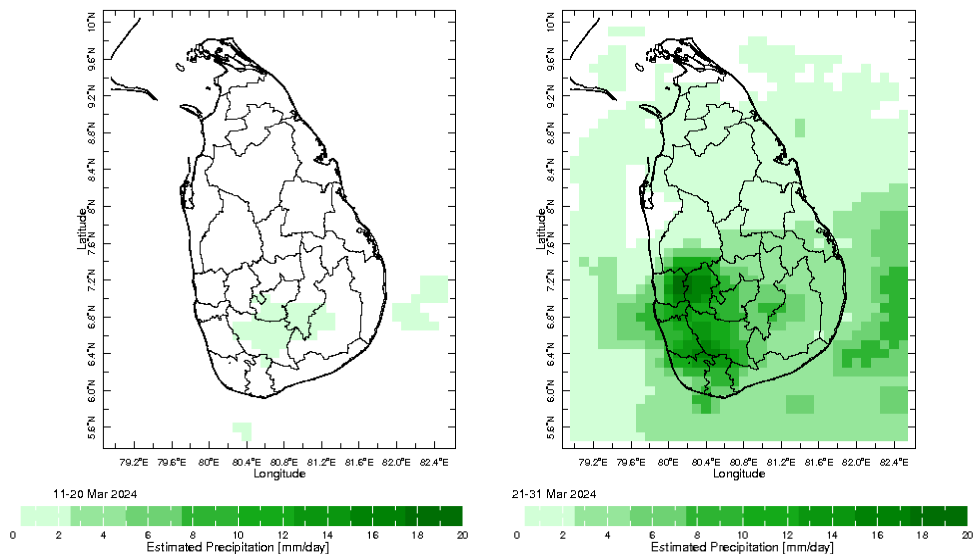
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



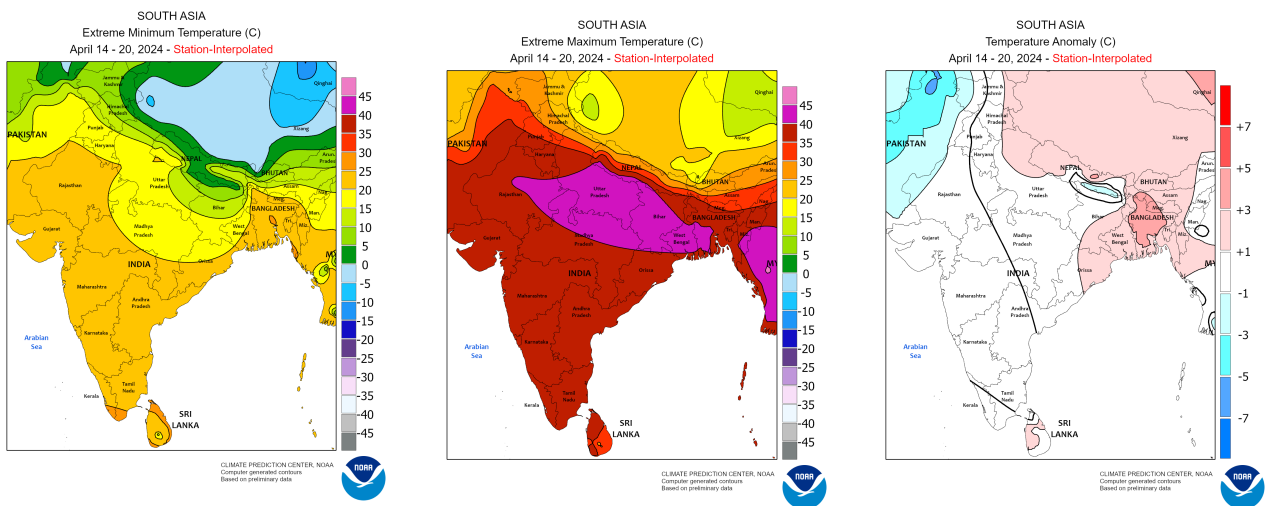
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



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

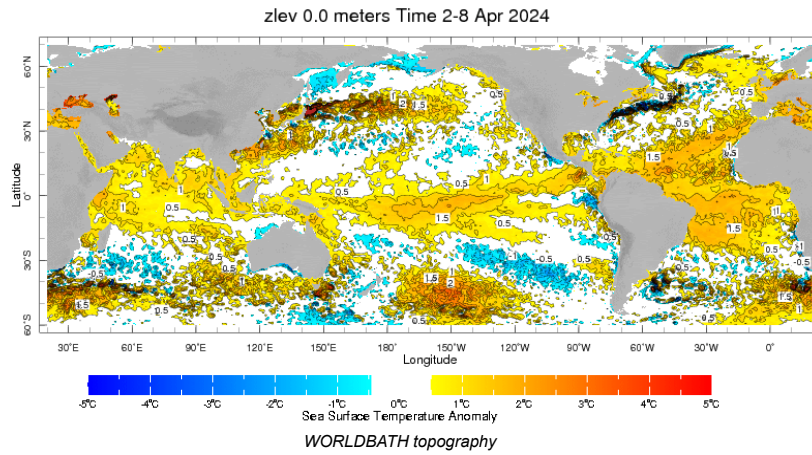


**Weekly Temperature Monitoring**



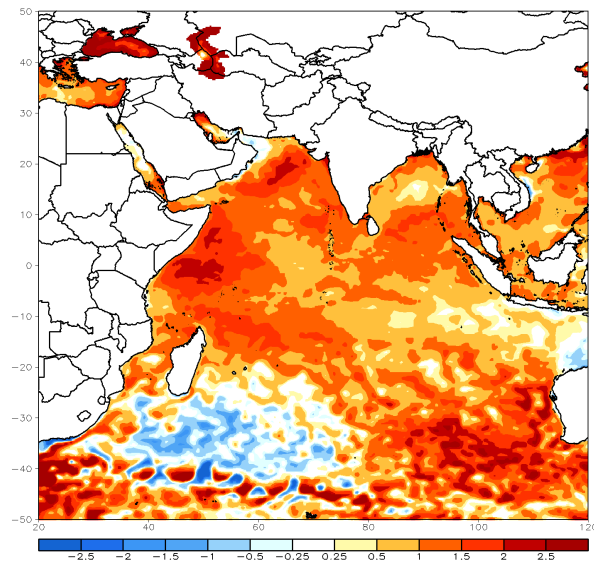
## Weekly Average SST Anomalies

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

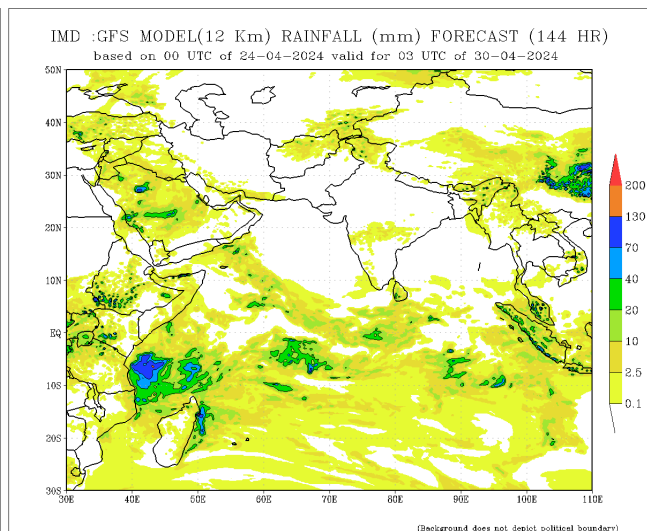
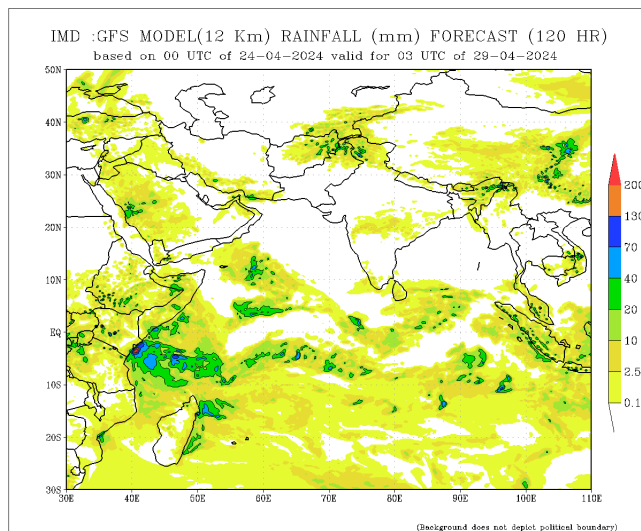
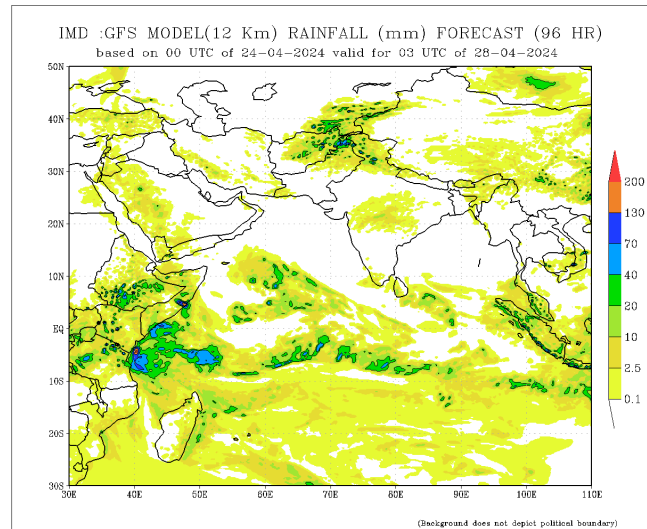
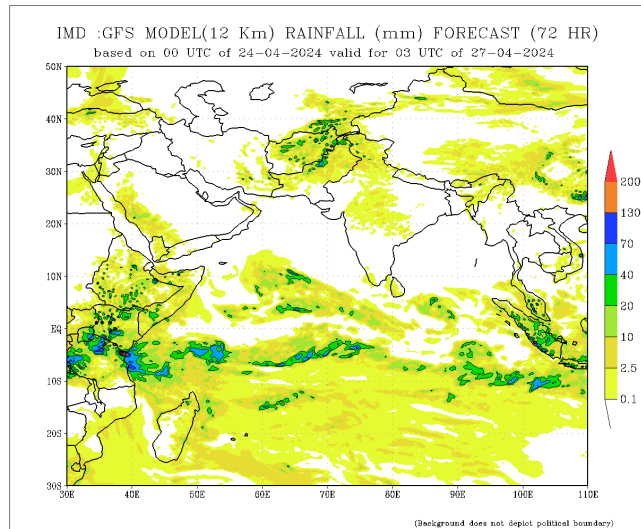
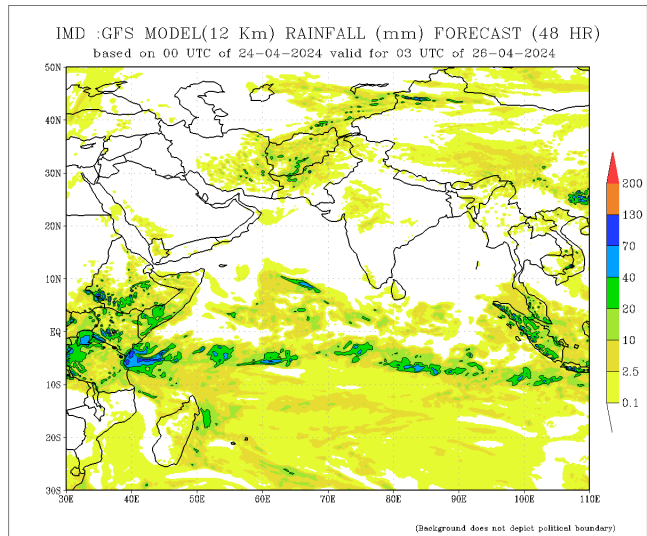
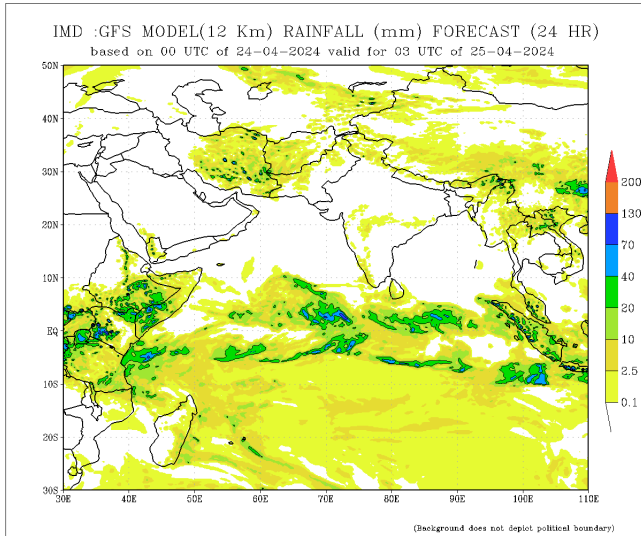


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

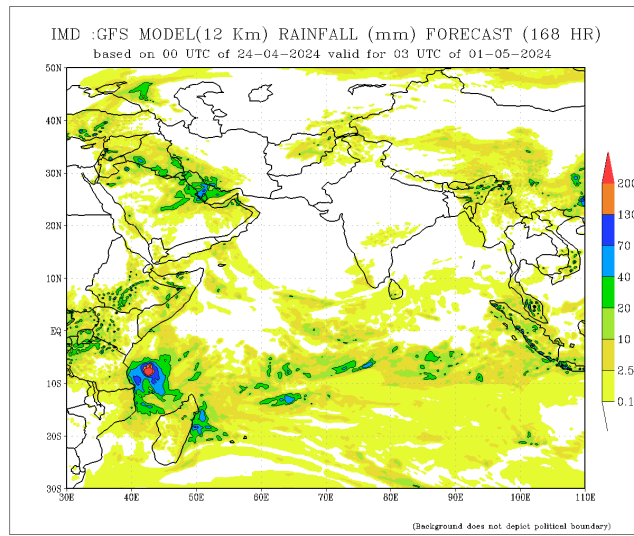
OI SST (v2) 7-Day Anomaly (C)  
Period: 17Apr2024 - 23Apr2024



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

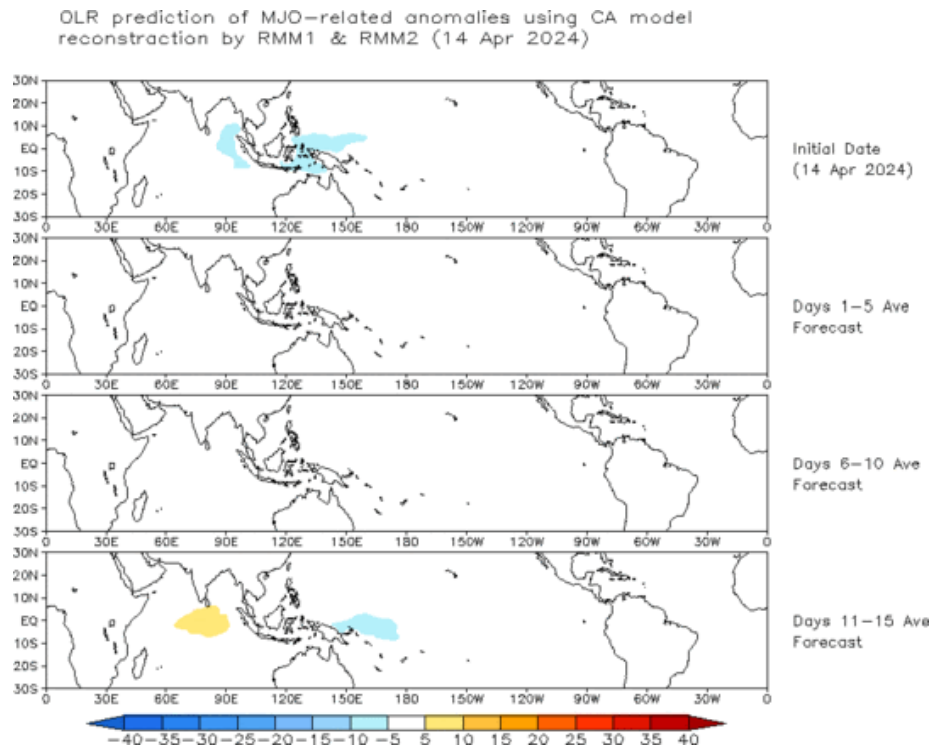






### Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

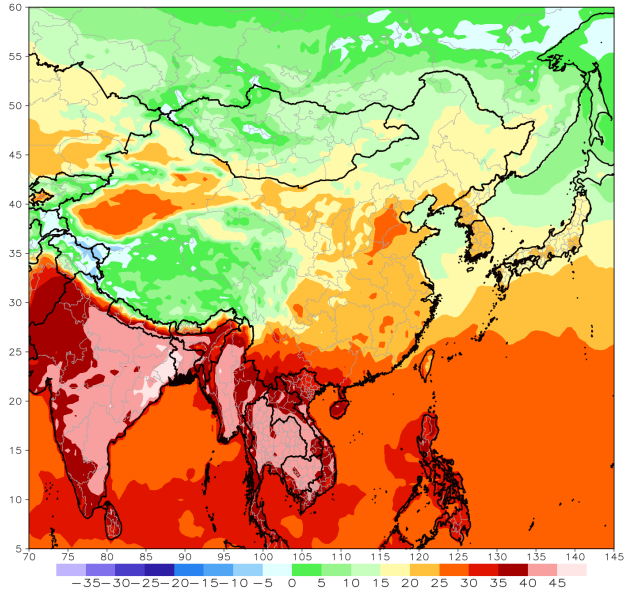
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



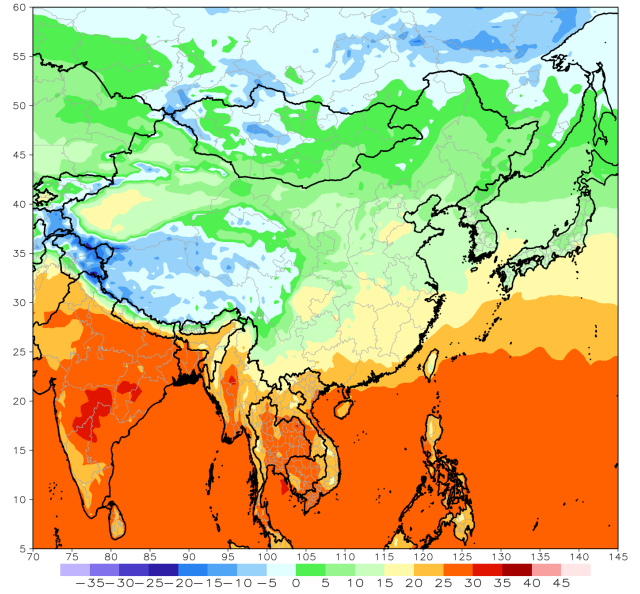
## Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)  
Period: 18z25Apr2024 - 18z01May2024



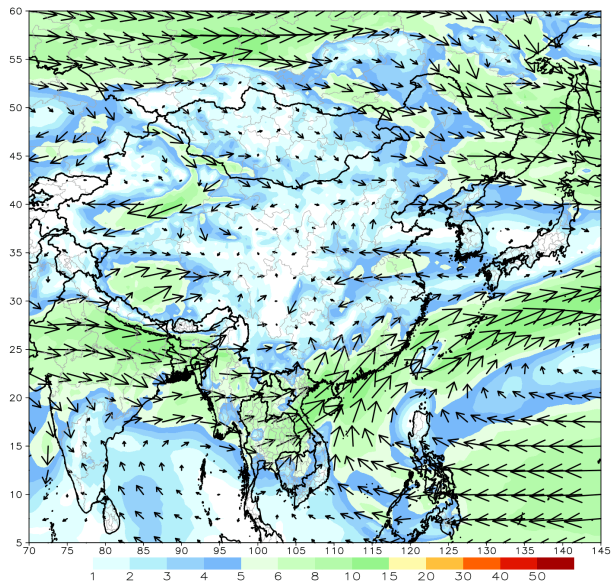
GFS week1 Temperature Min (C)  
Period: 18z25Apr2024 - 18z01May2024



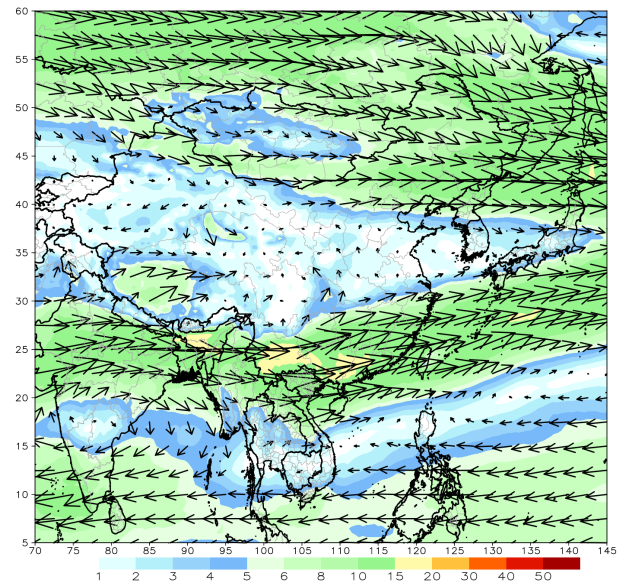
## Weekly Wind Forecast

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: 18z25Apr2024 - 18z01May2024



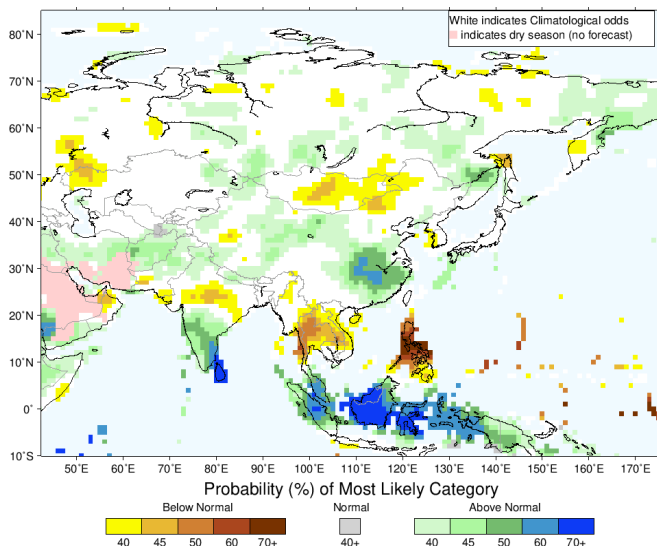
GFS 700mb week1 Mean Vector Wind Total (m/s)  
Period: 18z25Apr2024 - 18z01May2024



## Seasonal Rainfall and Temperature Forecast

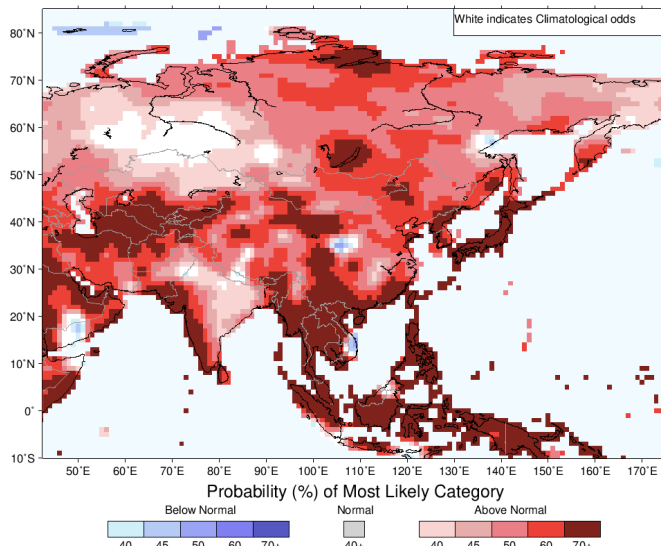
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 May-June-July 2024, Issued April 2024



Precipitation Forecast

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



Temperature Forecast

### 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.

### Contact us

Digana Village, Rajawella, KY20180, Sri Lanka.  
 76/2 Matala Road, Akurana, KY 20850, Sri Lanka.  
 +94 81 230 0415  
 +94 81 237 6746  
 info@fect.lk

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