

3 JUNE 2022

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

## HIGHLIGHTS

### Rainfall Prediction



• Heavy rainfall above 100 mm is expected in Sabaragamuwa, Western and Southern provinces during 3<sup>rd</sup> - 7<sup>th</sup> June with the risk of floods and landslides continues for these provinces and adjacent areas.

### Monitored Rainfalls



• Last week, floods affected twelve thousands with one fatality - O/L exams was scheduled in the peak stormy months with problems in the SW that were not foreseen but should have been.

### Monitored Wind



• From 23<sup>rd</sup> - 29<sup>th</sup> May, up to 15 m/s of gale-force south-westerly winds were experienced over the island.

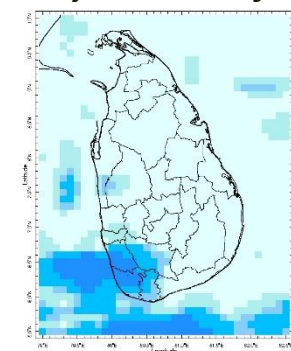
### Monitored Sea & Land Temp



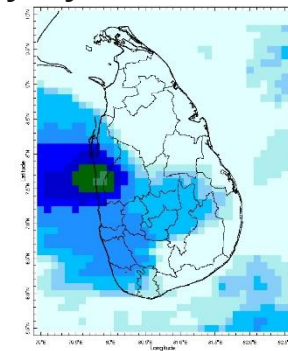
• Sea surface temperature was observed to be below average of 0.5°C to the west of the island. Land surface temperature remained near normal.

## Monitoring Rainfall

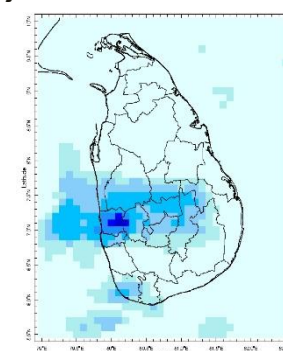
### Daily Estimates for Rainfall from 23<sup>rd</sup> – 30<sup>th</sup> May 2022



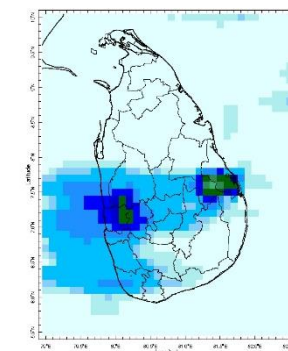
23 May



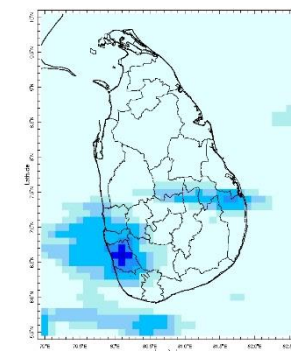
24 May



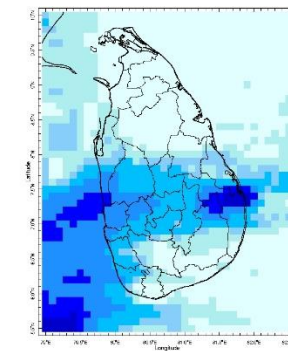
25 May



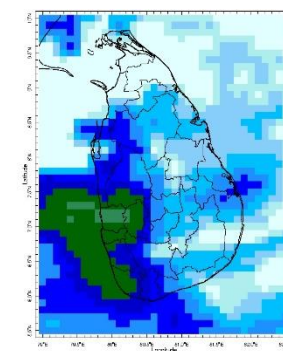
26 May



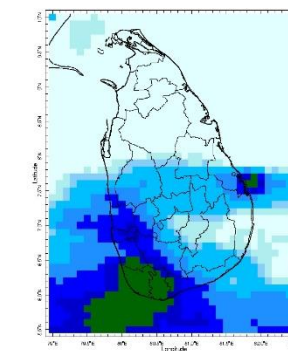
27 May



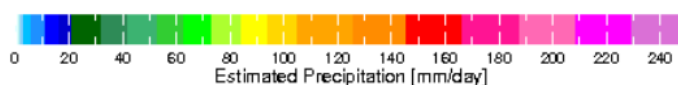
28 May



29 May



30 May



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## Ocean State *(Text Courtesy IRI)*

### **Pacific sea state: May 25, 2022**

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean in late-May. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate, though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer before slightly increasing through the Northern Hemisphere fall and early winter 2022.

### **Indian Ocean State**

Sea surface temperature was observed to be below average of 0.5°C to the west of the island.

## Predictions

### Rainfall

#### **14-day prediction: NOAA NCEP models**

**From 1<sup>st</sup> – 7<sup>th</sup> June:**

Total rainfall by Provinces:

Rainfall	Provinces
125 mm	Western, Southern
115 mm	Sabaragamuwa
75 mm	North Western
65 mm	Central, Uva
35 mm	North Central, Eastern

**From 8<sup>th</sup> – 14<sup>th</sup> June:**

Total rainfall by Provinces:

Rainfall	Provinces
105 mm	Southern, Western
95 mm	Sabaragamuwa
65 mm	Central, North Western
45 mm	Uva
35 mm	North Central
15 mm	Eastern, Northern

### MJO based OLR predictions

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

MJO shall moderately suppress the rainfall during 3<sup>rd</sup> - 10<sup>th</sup> June; and near neutral during 10<sup>th</sup> – 14<sup>th</sup> June.

## Interpretation

### Monitoring

**Rainfall:** During the last two weeks, there had been very heavy rainfall over the following area: Galle  
Daily Average Rainfall in the Met stations for previous week of (23<sup>rd</sup> - 30<sup>th</sup> May) = 7.0 mm  
Rmax: 105.7 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	2.9 mm
Eastern	0.6 mm
Western	16.8 mm
Southern Plains	2.8 mm

The Hydro Catchment Areas recorded 14.4 mm of average rainfall for the last week

Rmax: 108 mm & Rmin: 0 mm.

**Wind:** South-westerly prevailed in the sea area surrounding the island last week.

**Temperatures:** The temperature anomalies were near-normal for the entire island, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (3<sup>rd</sup> - 7<sup>th</sup> June) heavy rainfall (>100 mm) is predicted for the Southern, Western and Sabaragamuwa provinces.

**Temperatures:** The temperature remains slightly above normal in the Eastern province and slightly below normal in the central province during 3<sup>rd</sup> - 11<sup>th</sup> June.

**Teleconnections:**

La Niña - Though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer (August-October 2022).

MJO shall moderately suppress the rainfall during 3<sup>rd</sup> - 10<sup>th</sup> June; and near neutral during 10<sup>th</sup> – 14<sup>th</sup> June.

**Seasonal Precipitation:**

The precipitation forecast for the June-July-August season shows below-normal precipitation for the southern province and above-normal precipitation to the north province.

### Terminology for Rainfall Ranges

	Rainfall (During 24 hours of period)
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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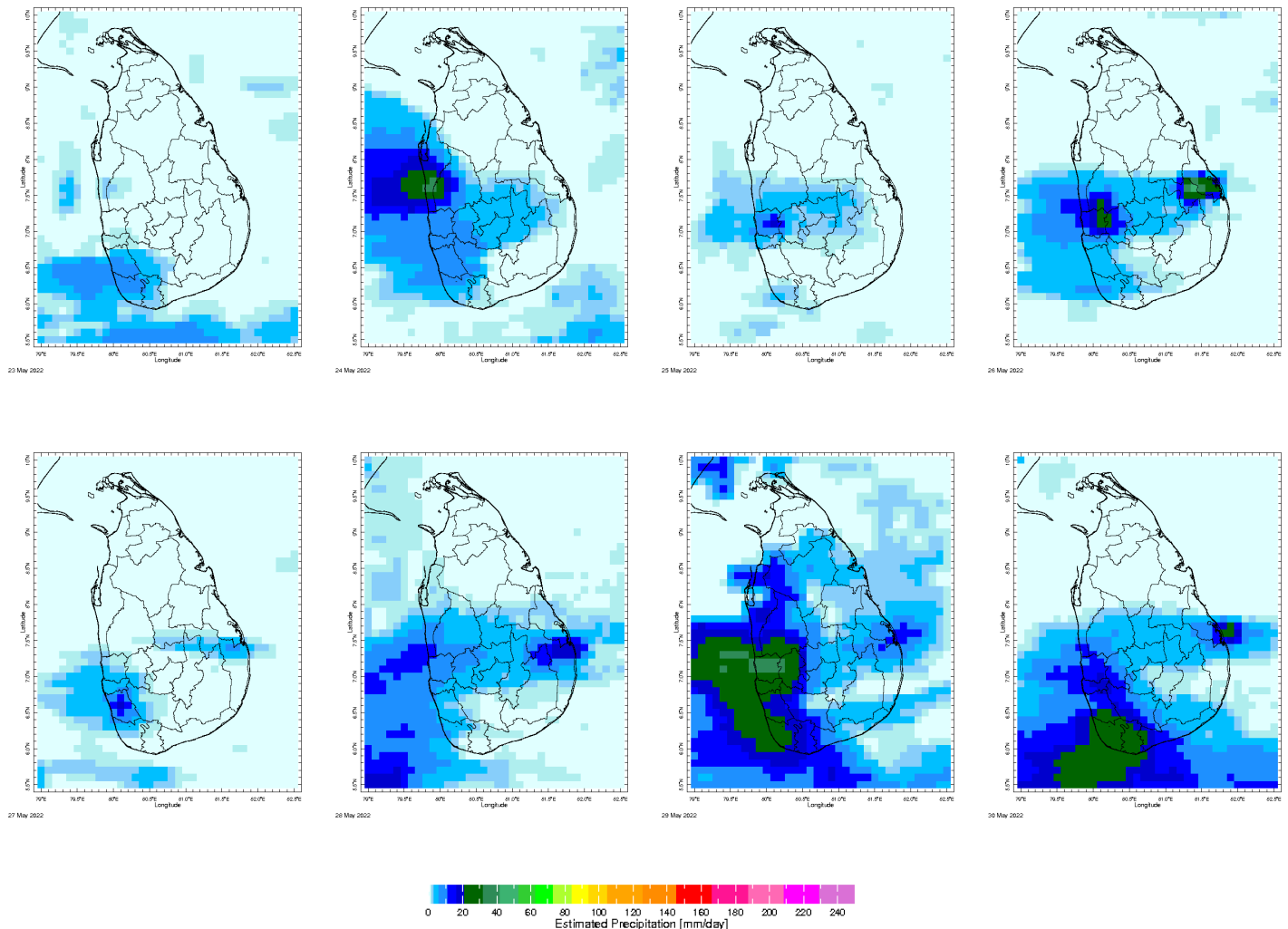
#### 2. Predictions

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### MONITORING

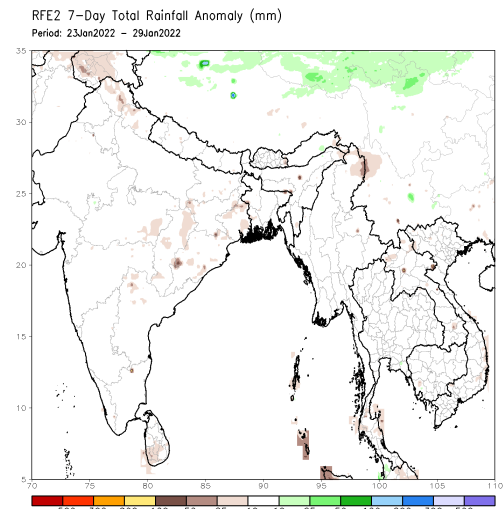
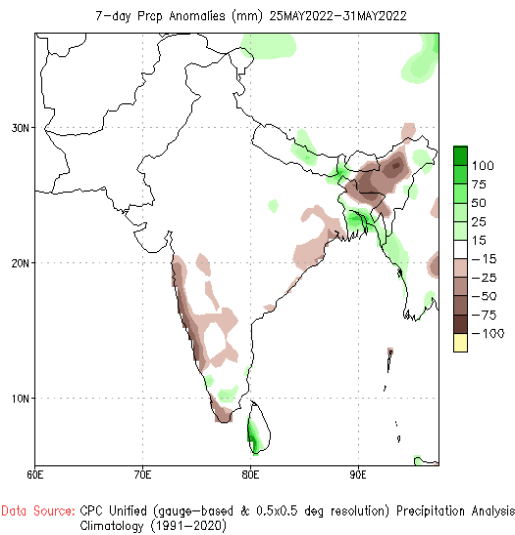
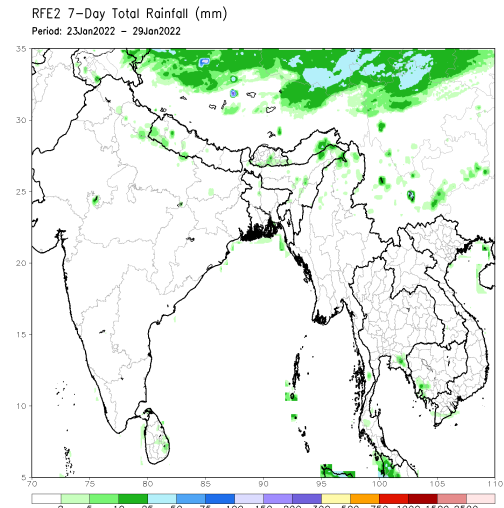
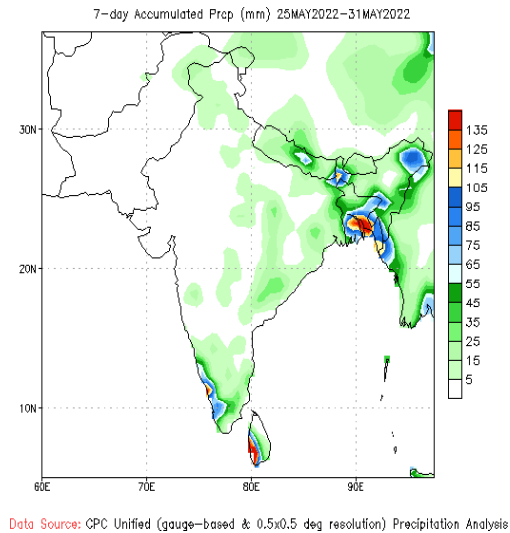
#### Daily Rainfall Monitoring

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



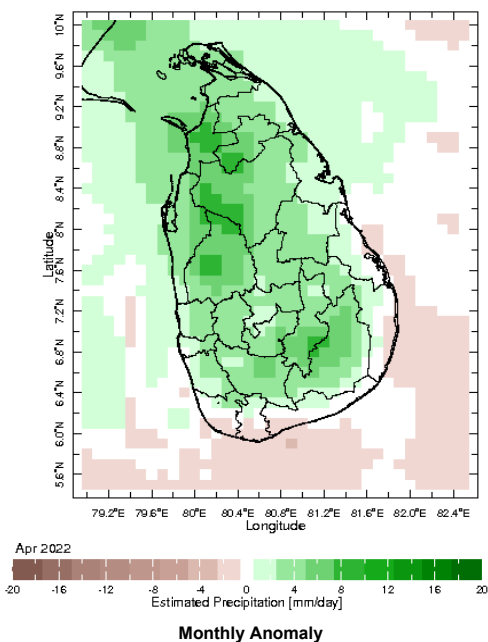
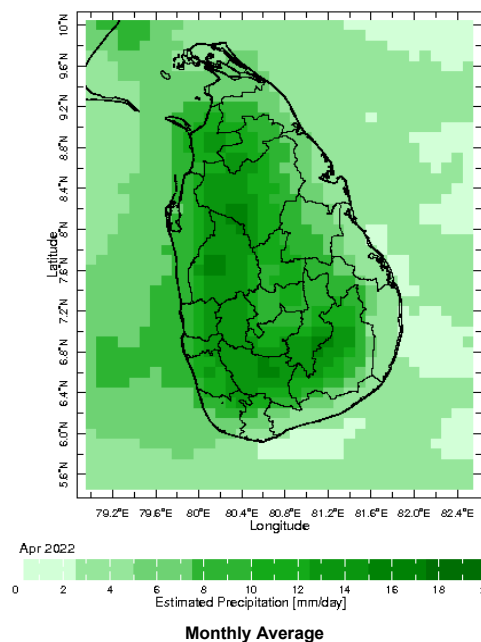
## Weekly Rainfall Monitoring

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.



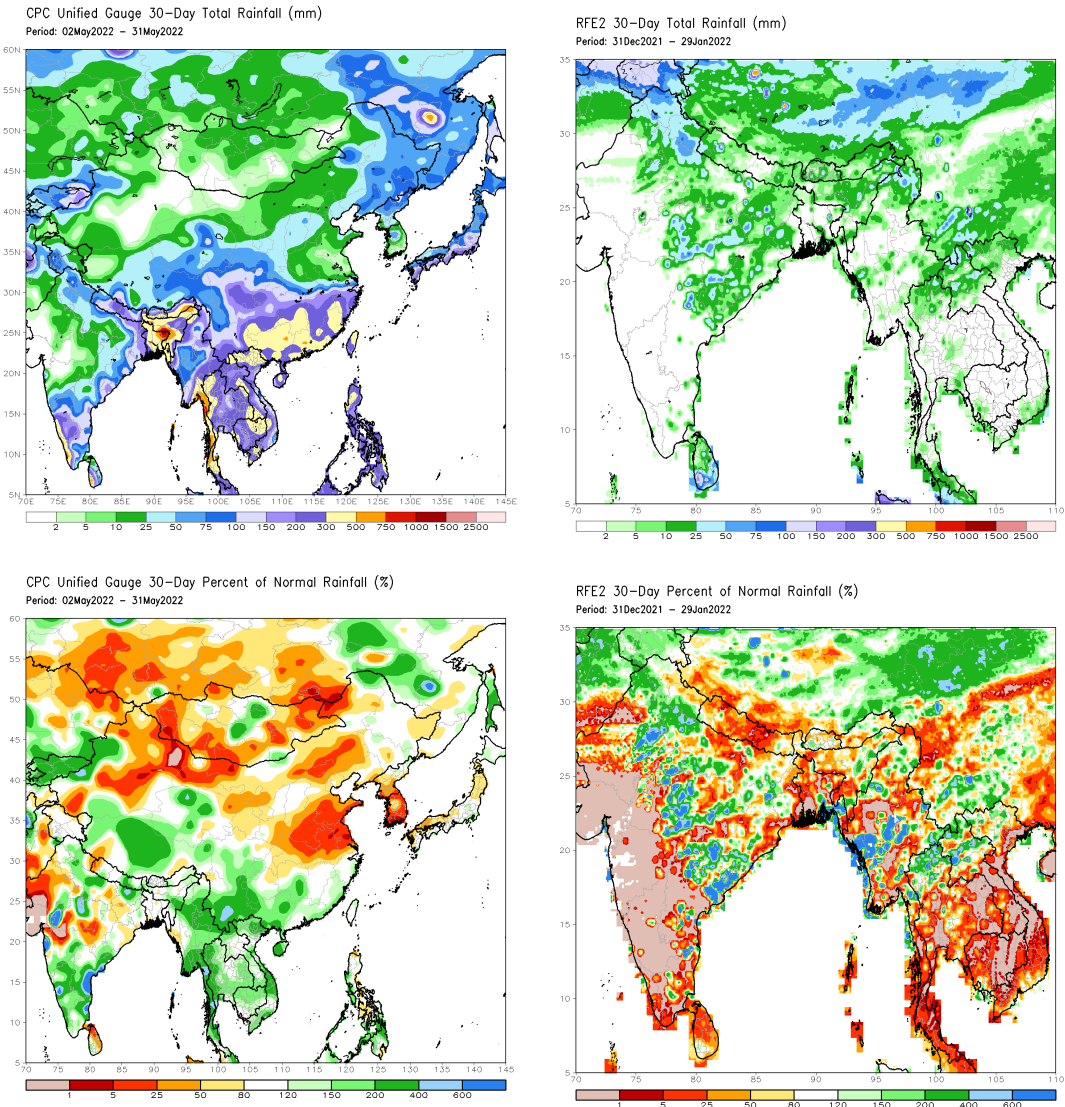
## Monthly Rainfall Monitoring

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

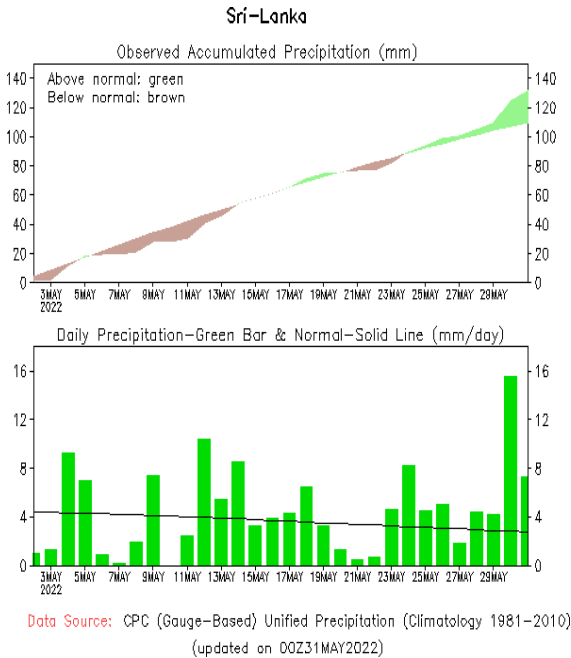




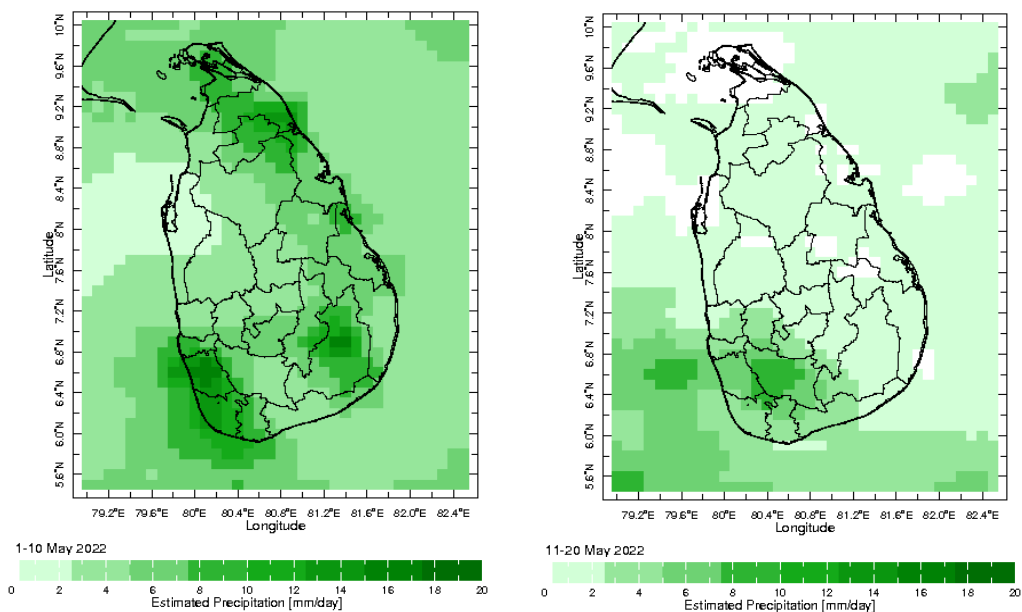
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



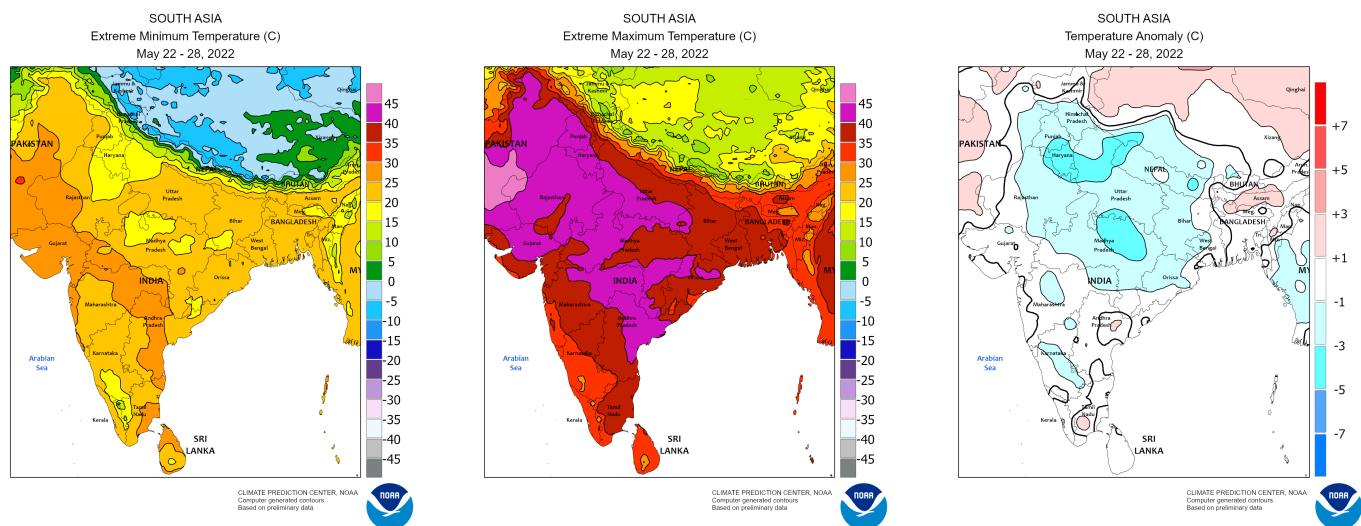
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



## Dekadal (10 Day) Satellite Derived Rainfall Estimates

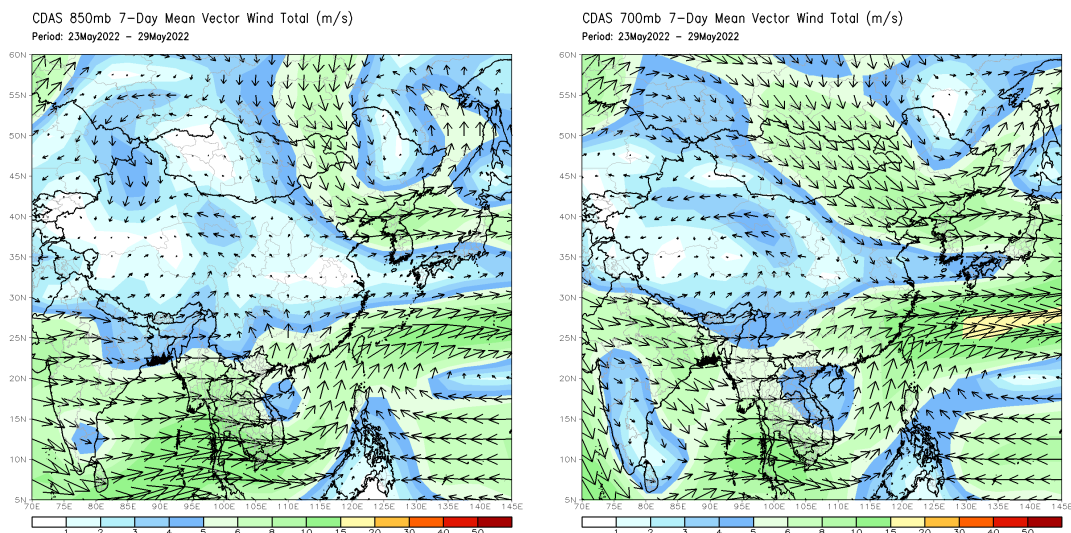


## Weekly Temperature Monitoring



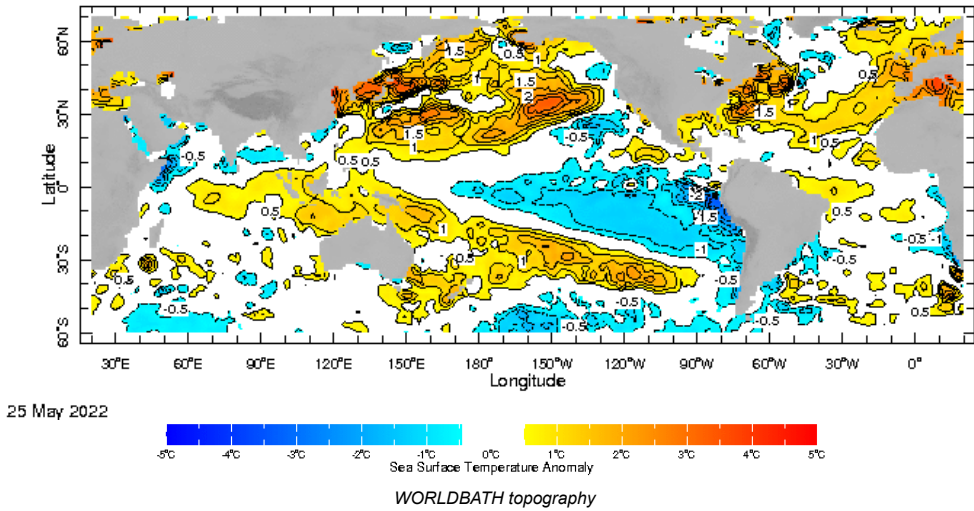
## Weekly Wind Monitoring

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.

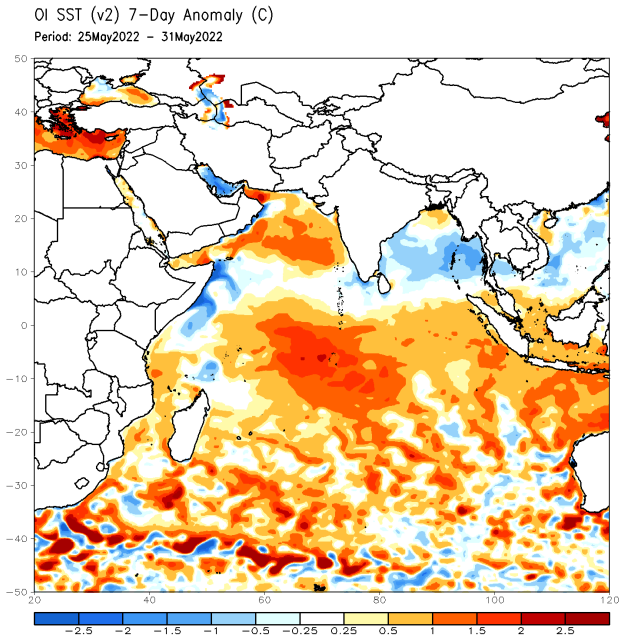


**Weekly Average SST Anomalies**

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



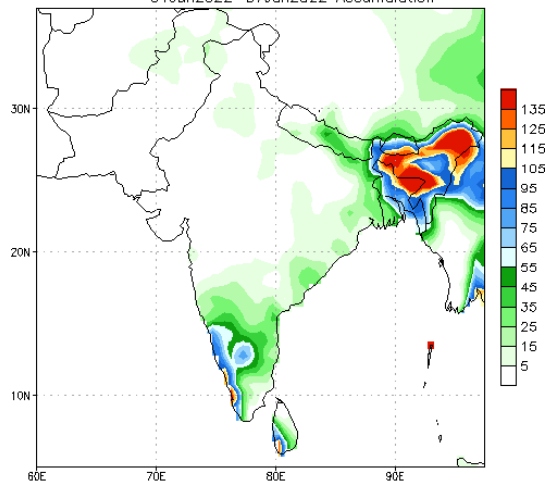
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC





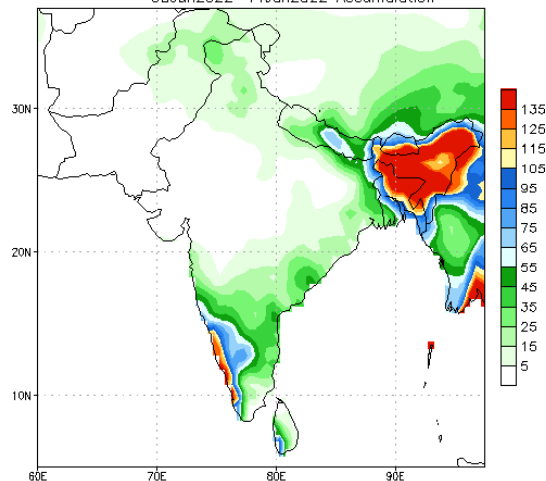
## NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 01Jun2022  
01Jun2022-07Jun2022 Accumulation



Bias correction based on last 30-day forecast error

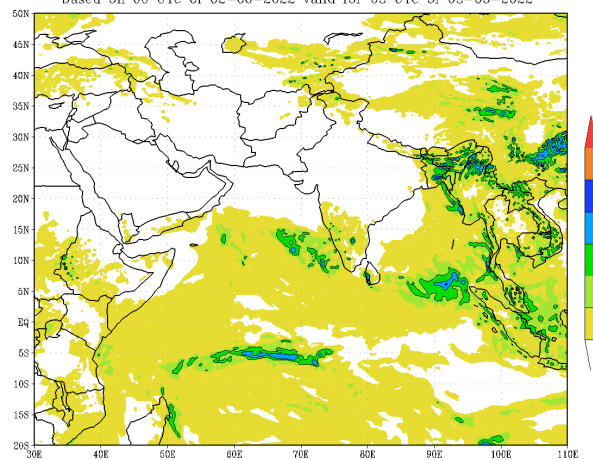
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 01Jun2022  
08Jun2022-14Jun2022 Accumulation



Bias correction based on last 30-day forecast error

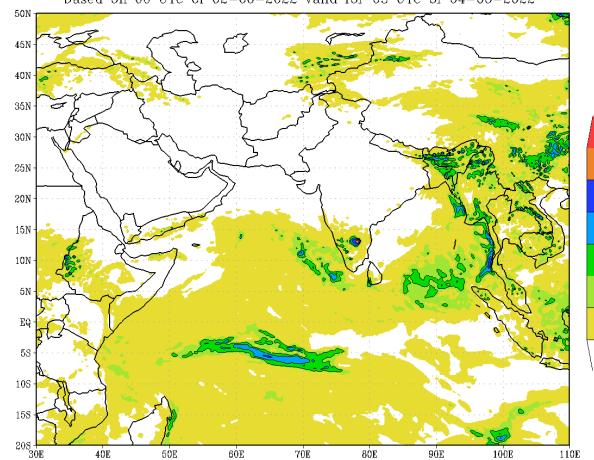
## IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)  
based on 00 UTC of 02-06-2022 valid for 03 UTC of 03-06-2022



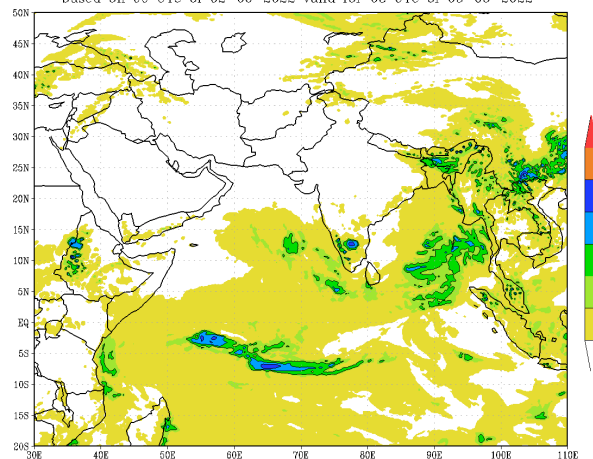
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)  
based on 00 UTC of 02-06-2022 valid for 03 UTC of 04-06-2022



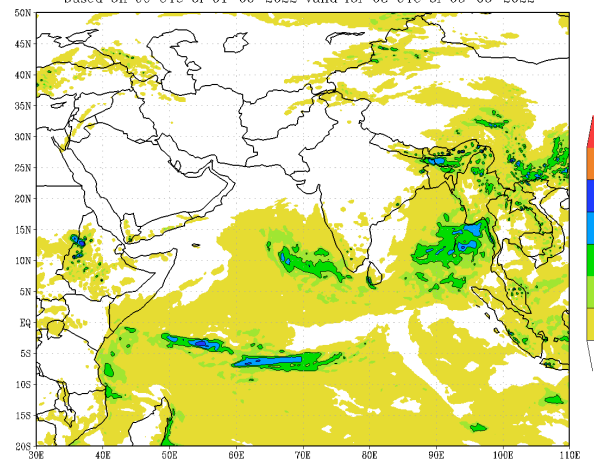
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)  
based on 00 UTC of 02-06-2022 valid for 03 UTC of 05-06-2022

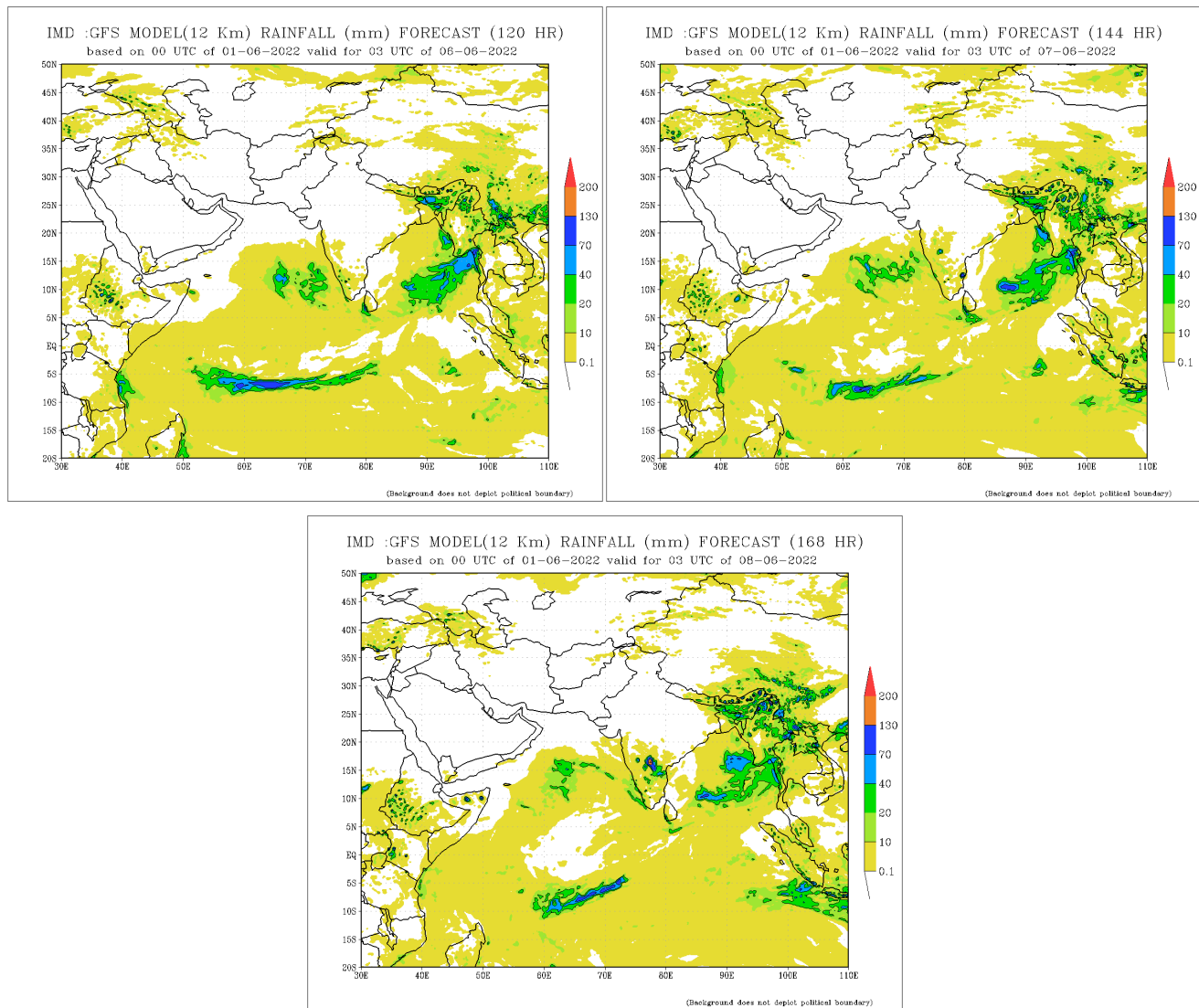


(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)  
based on 00 UTC of 01-06-2022 valid for 03 UTC of 05-06-2022

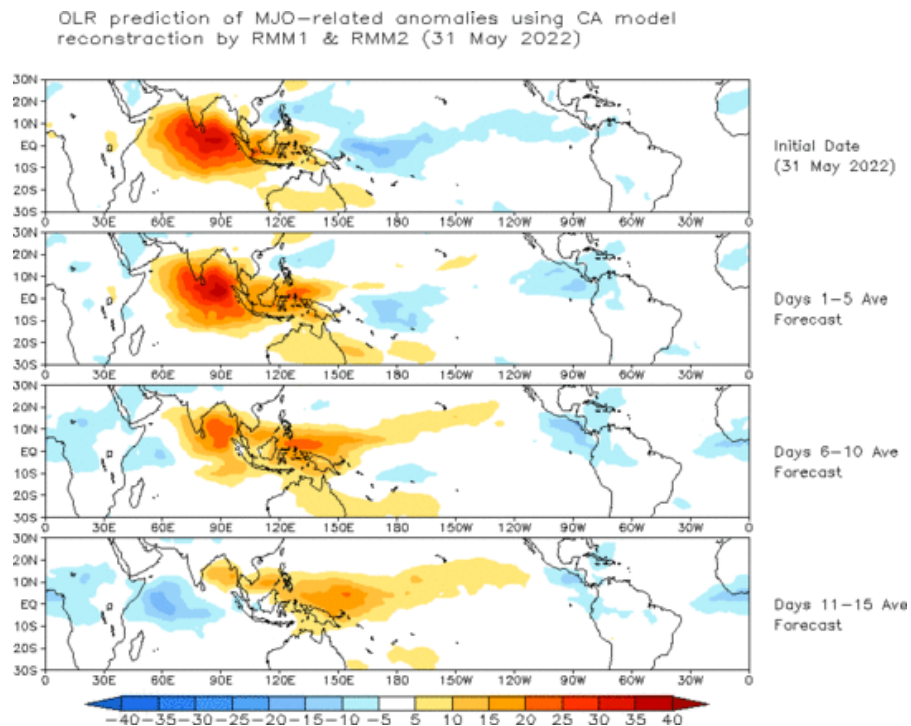


(Background does not depict political boundary)



## 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.

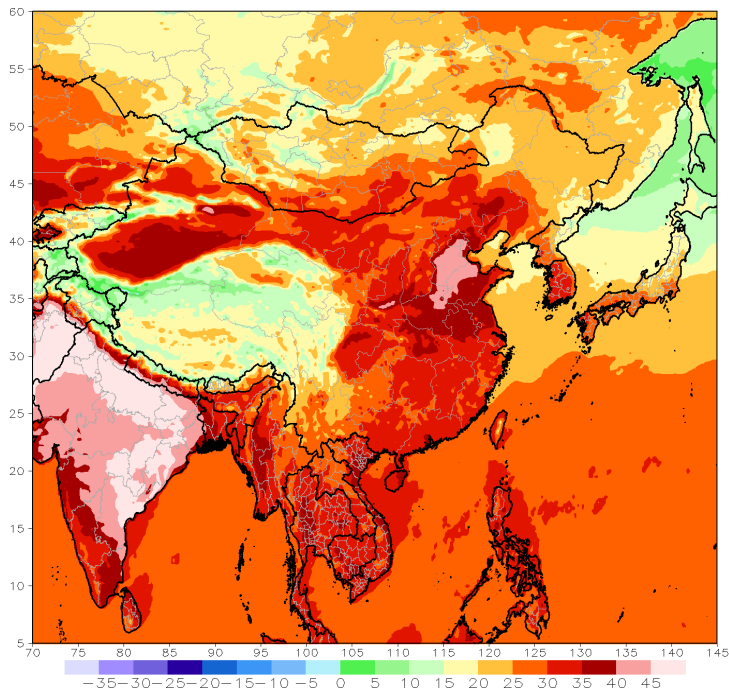


## Weekly Temperature Forecast

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

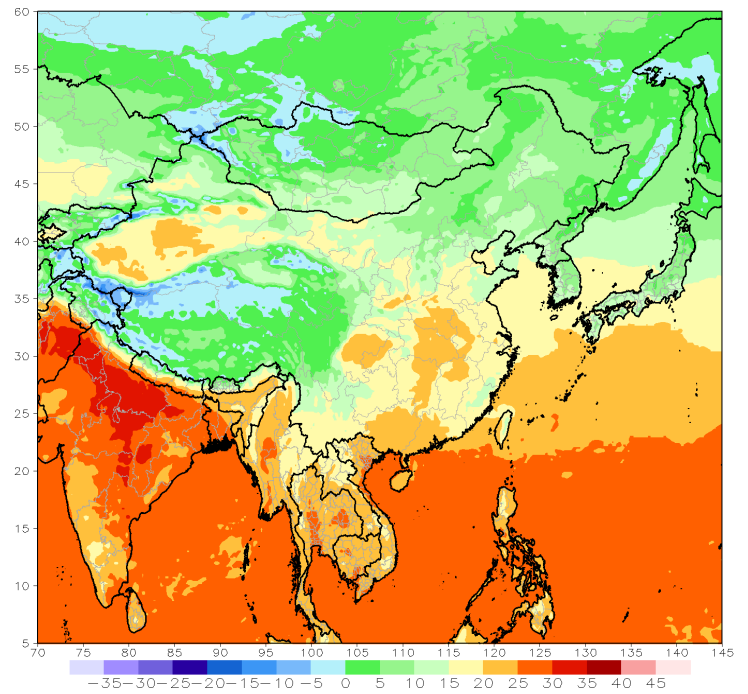
GFS week1 Temperature Max (C)

Period: 18z02Jun2022 – 18z08Jun2022



GFS week1 Temperature Min (C)

Period: 18z02Jun2022 – 18z08Jun2022

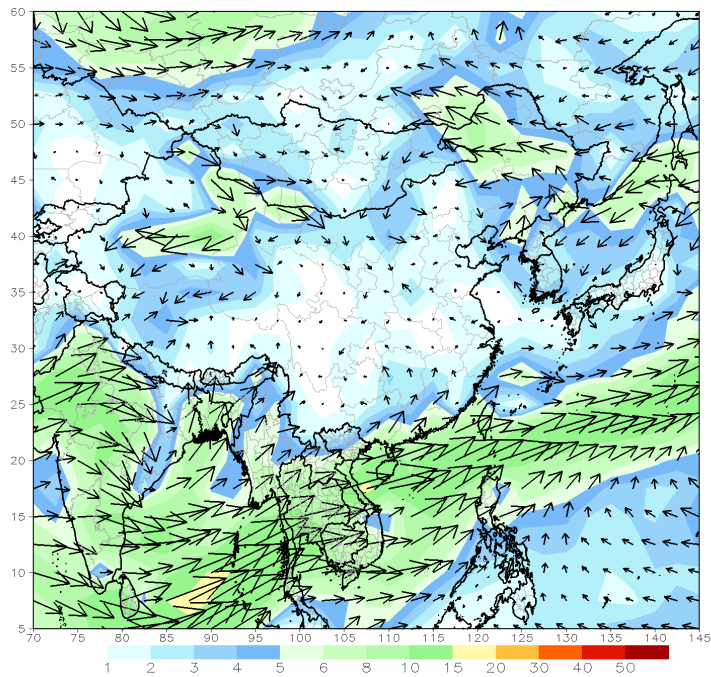


## Weekly Wind Forecast

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

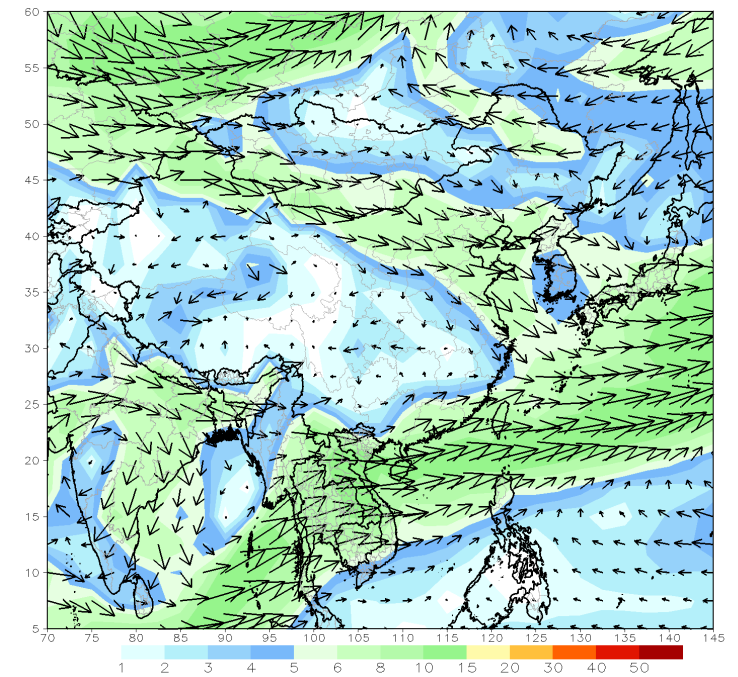
GFS 850mb week1 Mean Vector Wind Total (m/s)

Period: 18z02Jun2022 – 18z08Jun2022



GFS 700mb week1 Mean Vector Wind Total (m/s)

Period: 18z02Jun2022 – 18z08Jun2022

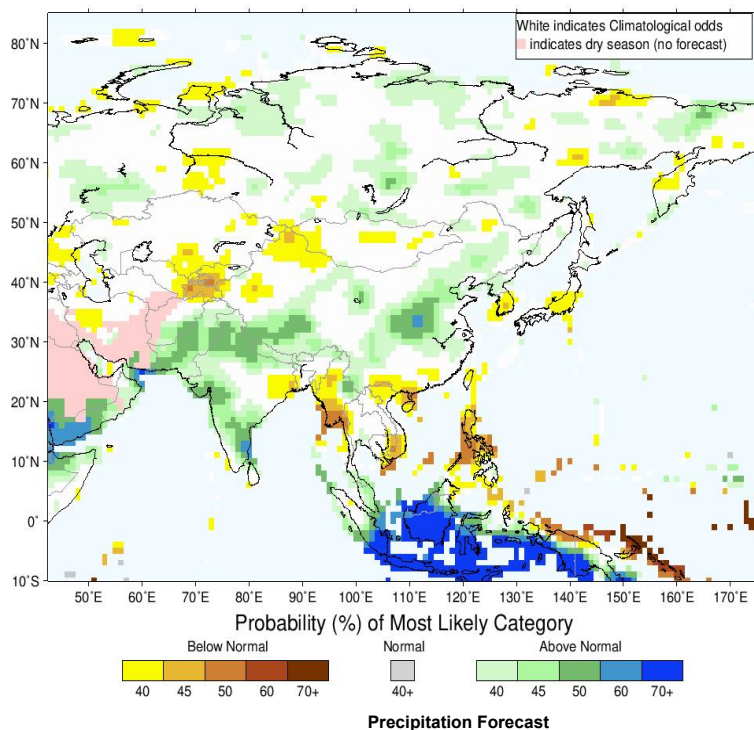




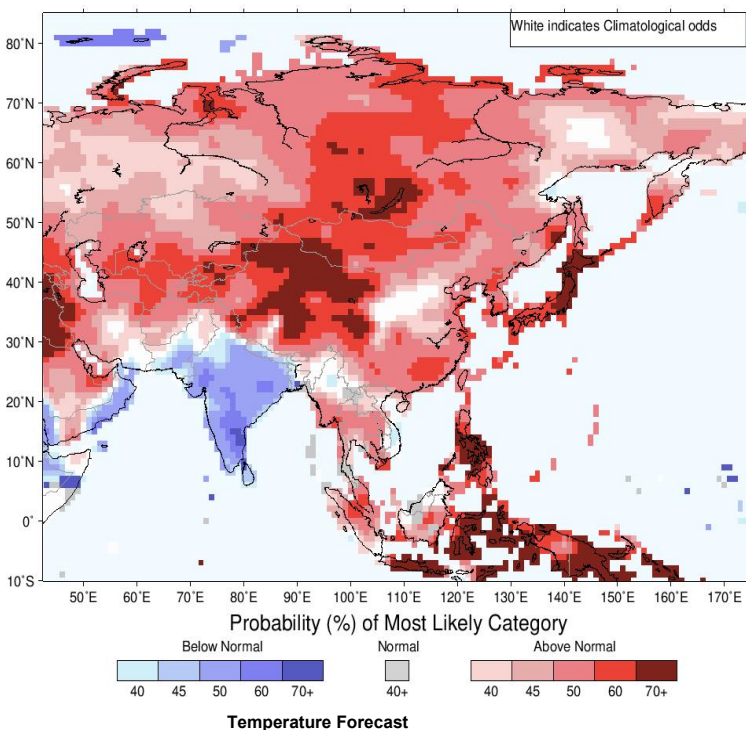
## Seasonal Rainfall and Temperature Forecast

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 2022, Issued May 2022



IRI Multi-Model Probability Forecast for Temperature for June-July-August 2022, Issued May 2022



### 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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