

Week of  
1 - 8 April  
2022

## CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

### HIGHLIGHTS

#### Rainfall Prediction



- From 1<sup>st</sup> - 6<sup>th</sup> April, Moderate rainfall (up to 35 mm) is expected for the Sabaragamuwa, Western & Southern provinces while less is expected other provinces.

#### Monitored Rainfalls



- During the last week the Average Daily Rainfall in Sri Lanka was 2.3 mm, with max of 109 mm in Kalutara on 29<sup>th</sup> March.

#### Monitored Wind



- From 22<sup>nd</sup> - 28<sup>th</sup> March, up to 3m/s Southerlies to South-easterlies were experienced.

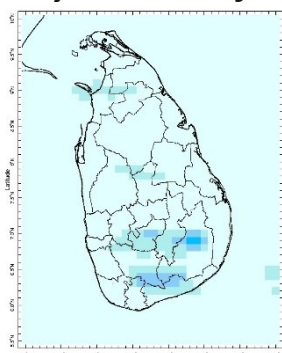
#### Monitored Sea Surface



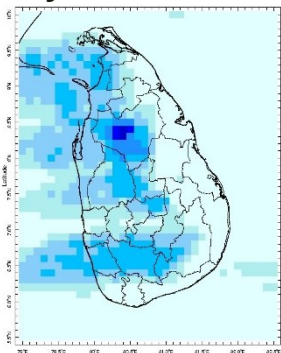
- Sea surface temperature was above 0.5 °C to the north of Sri Lanka. A La Niña pattern is prevalent in the Pacific Ocean but not in the Indian Ocean.

### Monitoring Rainfall

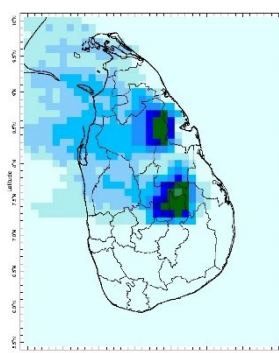
#### Daily Estimates for Rainfall from 22<sup>nd</sup> – 29<sup>th</sup> March 2022



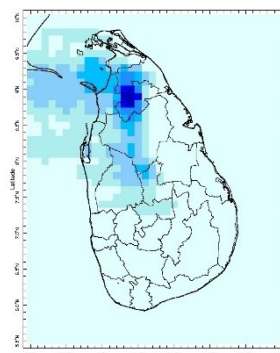
22 March



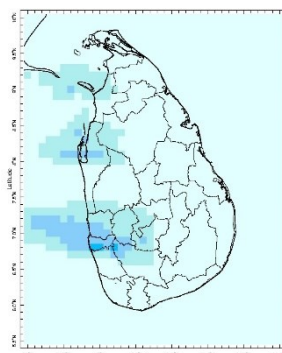
23 March



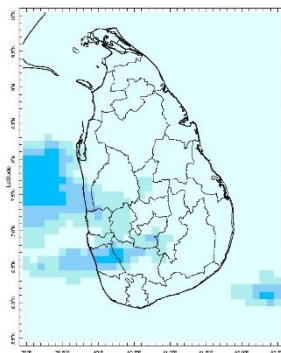
24 March



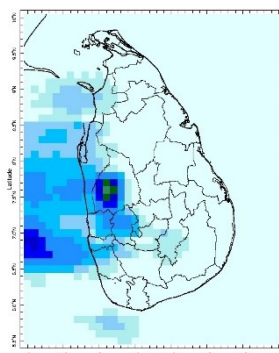
25 March



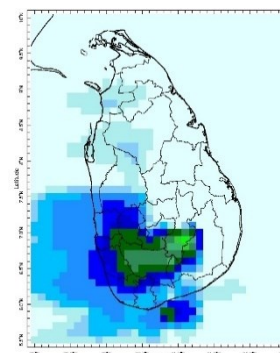
26 March



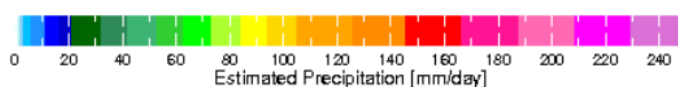
27 March



28 March



29 March



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](https://www.linkedin.com/in/fectlk)

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## Ocean State *(Text Courtesy IRI)*

### **Pacific sea state: March 23, 2022**

Equatorial sea surface temperatures (SSTs) are below average across the East Central and Eastern Pacific Ocean in late-March. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate La Niña is favored to continue into the Northern Hemisphere summer, with a 40-50% chance of La Niña or ENSO neutral thereafter.

### **Indian Ocean State**

Sea surface temperature was above 0.5°C to the north of Sri Lanka. A La Niña pattern is prevalent in the Pacific Ocean but not in the Indian Ocean.

## Predictions

### Rainfall

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

**From 1<sup>th</sup> – 6<sup>th</sup> April:**

Total rainfall by Provinces:

Rainfall	Provinces
35 mm	Western, Sabaragamuwa, Southern
25 mm	Central, North Western, Eastern, North Central, Uva
15 mm	Northern

**From 7<sup>th</sup> March – 13<sup>th</sup> April:**

Total rainfall by Provinces:

Rainfall	Provinces
35 mm	Western, Sabaragamuwa, Southern, Eastern
25 mm	North Western, North Central, Uva, Central
15 mm	Northern

### **MJO based OLR predictions**

**For the next 15 days:**

MJO shall neutral during 1<sup>st</sup> – 4<sup>th</sup> April; slightly enhance the rainfall during 5<sup>th</sup> - 9<sup>th</sup> April; and moderately enhance during 10<sup>th</sup> – 14<sup>th</sup> April.

## Interpretation

### Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (22<sup>nd</sup>-29<sup>th</sup> March) = 2.3 mm  
Rmax: 24.4 mm & Rmin: 0mm.

Region	Average rainfall for the Last 8 days
Northern Plains	2.2 mm
Eastern	1.1 mm
Western	3.1mm
Southern Plains	0.04 mm

The Hydro Catchment Areas recorded 2.7 mm of average rainfall for the last week

Rmax: 11.6 mm & Rmin: 0 mm.

**Wind:** Southerly to South-easterly winds prevailed in the sea area surrounding the island last week.

**Temperatures:** The temperature anomalies were near-neutral for the country, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (1<sup>st</sup> – 6<sup>th</sup> April) moderate rainfall is predicted for Western, Sabaragamuwa and Southern provinces.

**Temperatures:** The temperature remains slightly above normal in the Northern and provinces during 1<sup>st</sup> – 9<sup>th</sup> April.

### Teleconnections:

La Nina - The SST forecast indicates that La Niña is favored to continue into the Northern Hemisphere summer (June-August 2022).

MJO shall neutral during 1<sup>st</sup> – 4<sup>th</sup> April; slightly enhance the rainfall during 5<sup>th</sup> - 9<sup>th</sup> April; and moderately enhance during 10<sup>th</sup> – 14<sup>th</sup> April.

### Seasonal Precipitation:

The precipitation forecast for the April-May-June season shows above-normal precipitation for the island, while some parts of the southern province remain neutral.

### 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

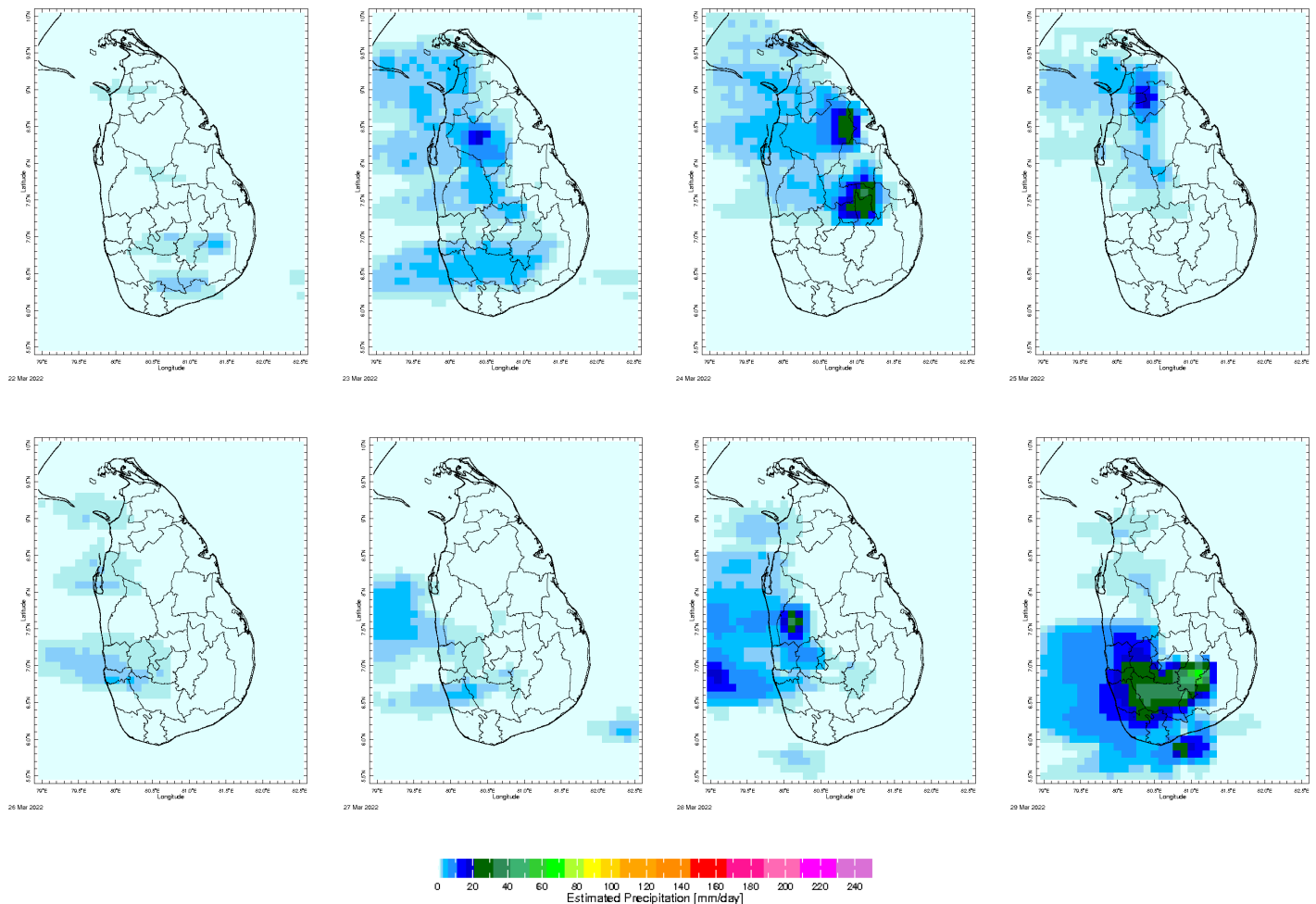
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- GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- MJO Related OLR Forecast
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### MONITORING

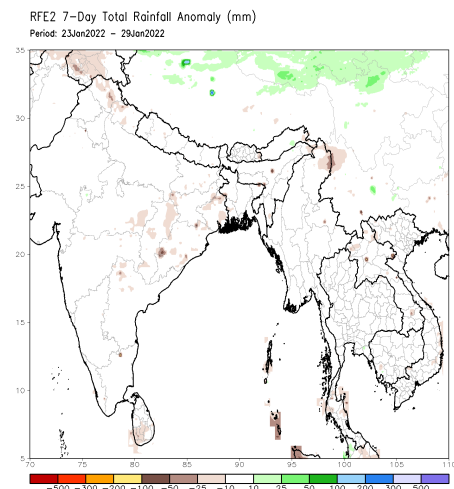
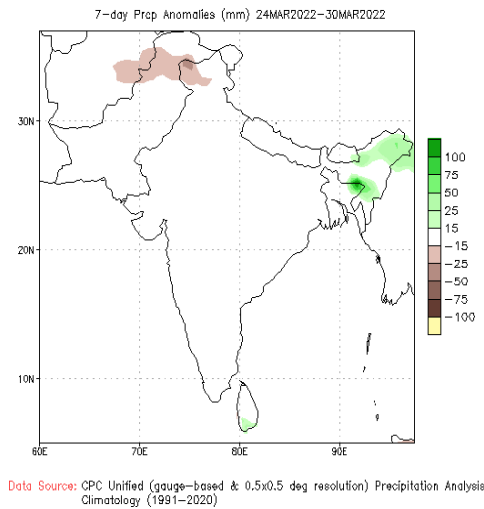
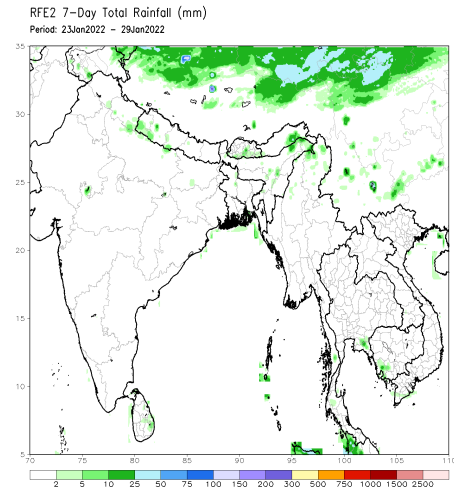
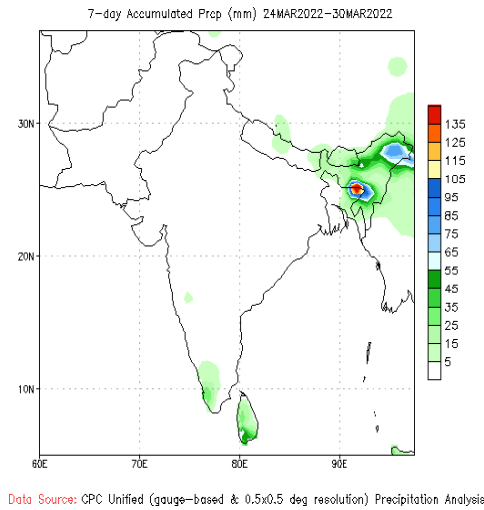
#### Daily Rainfall Monitoring

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



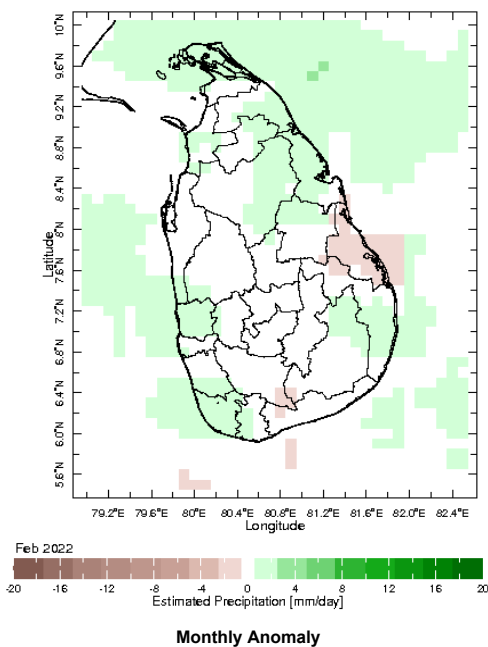
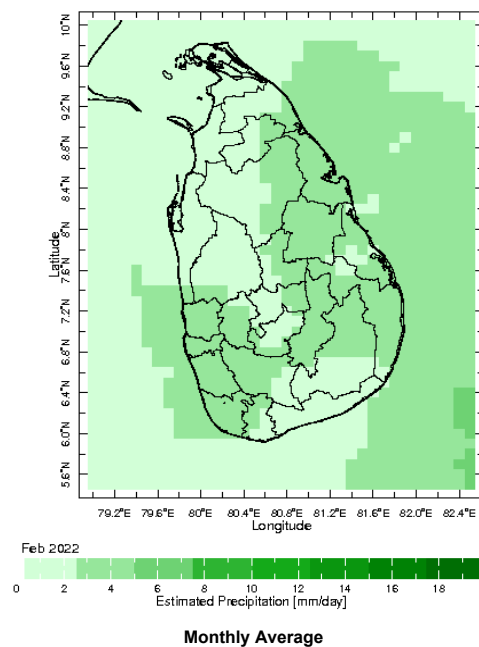
## Weekly Rainfall Monitoring

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.

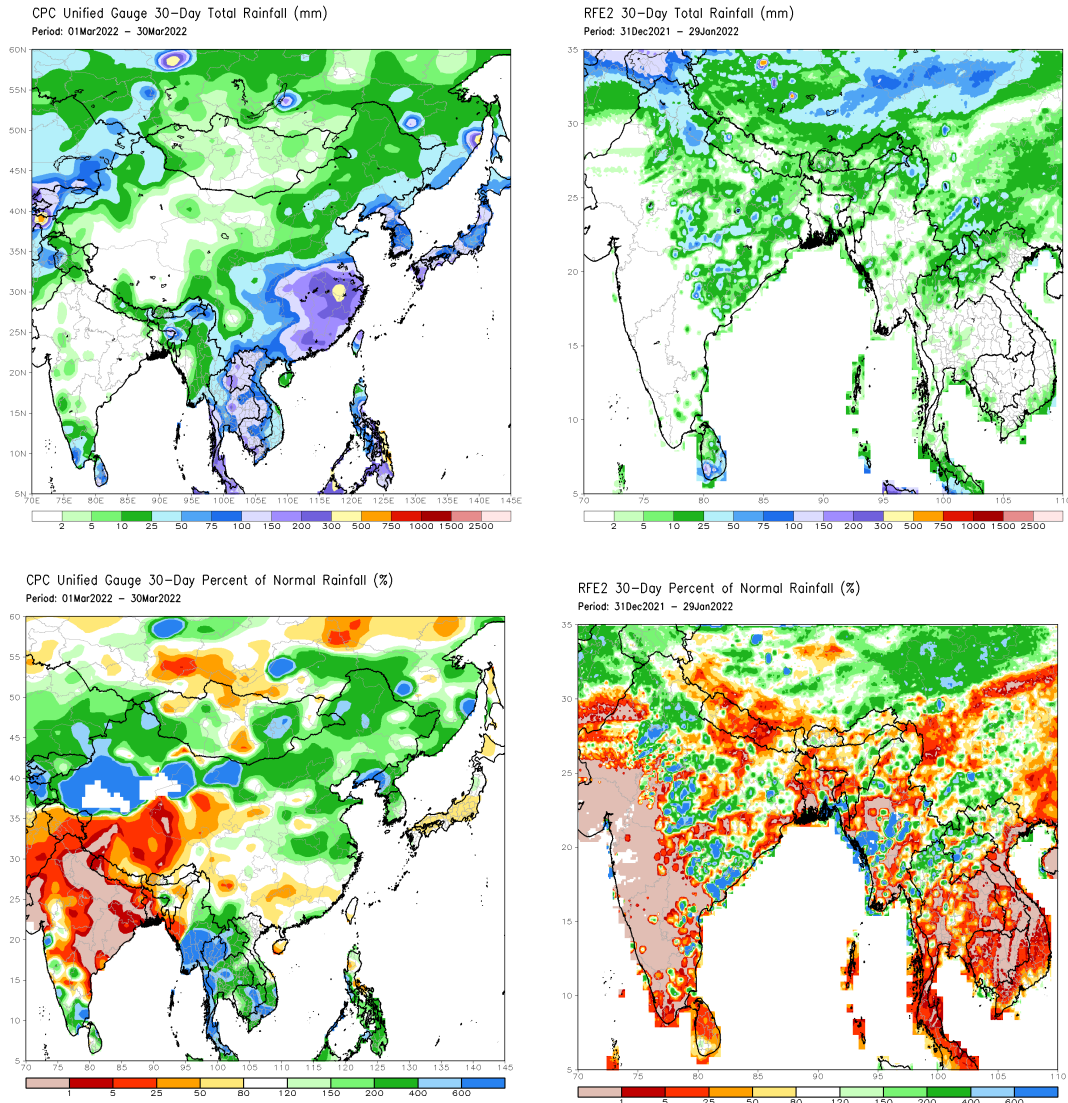


## Monthly Rainfall Monitoring

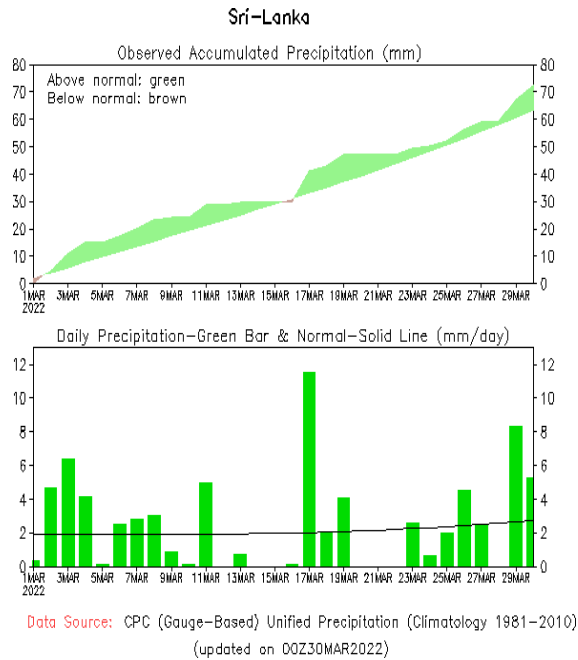
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



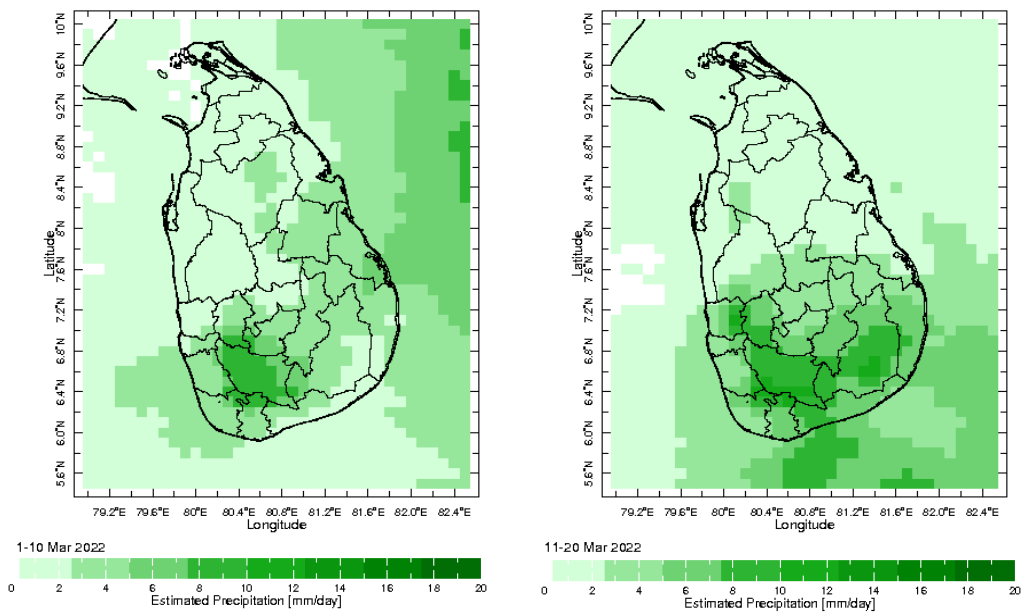
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



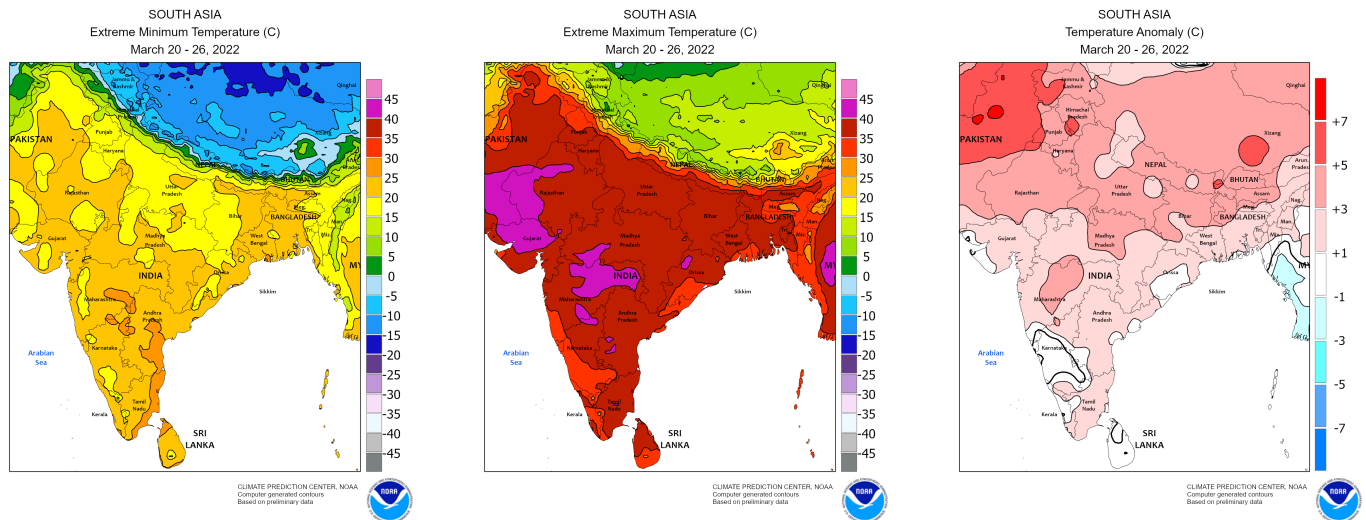
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



## Dekadal (10 Day) Satellite Derived Rainfall Estimates

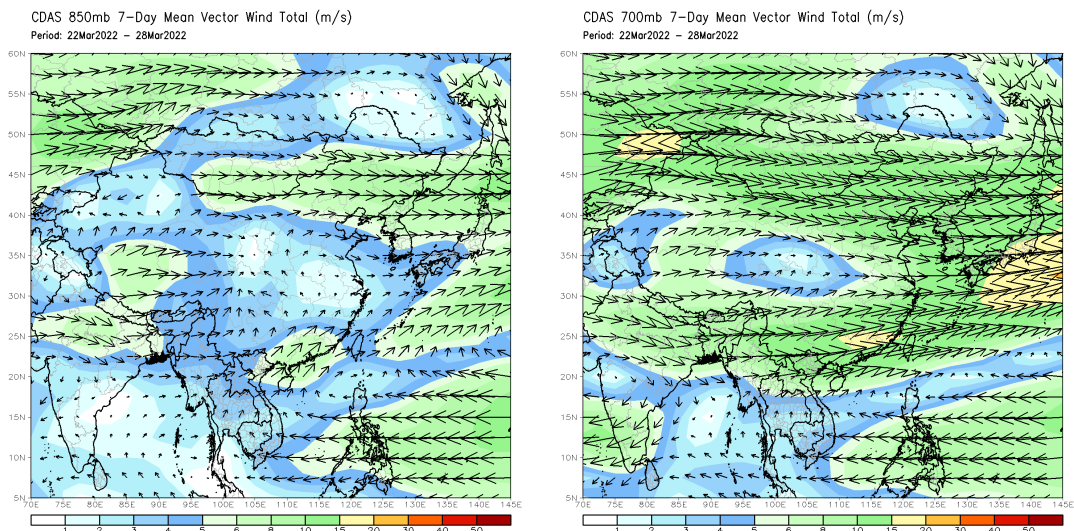


## Weekly Temperature Monitoring



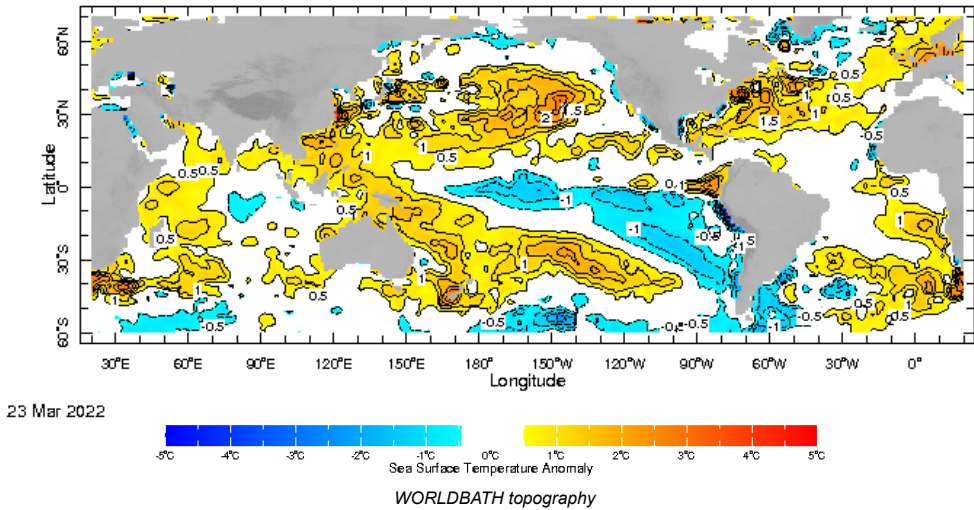
## Weekly Wind Monitoring

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.

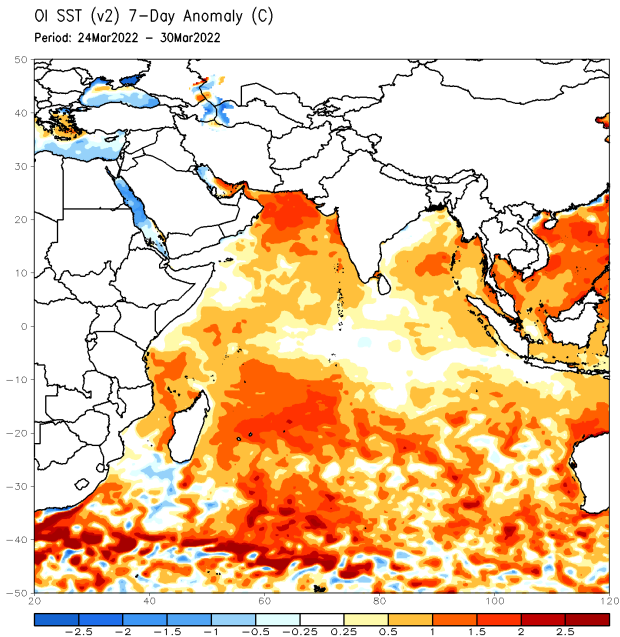


Weekly Average SST Anomalies

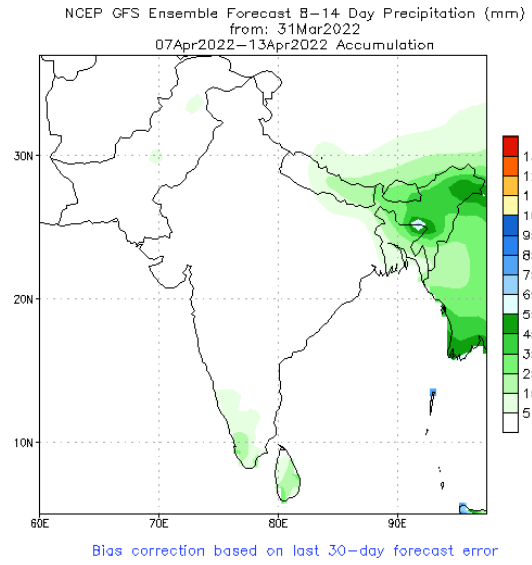
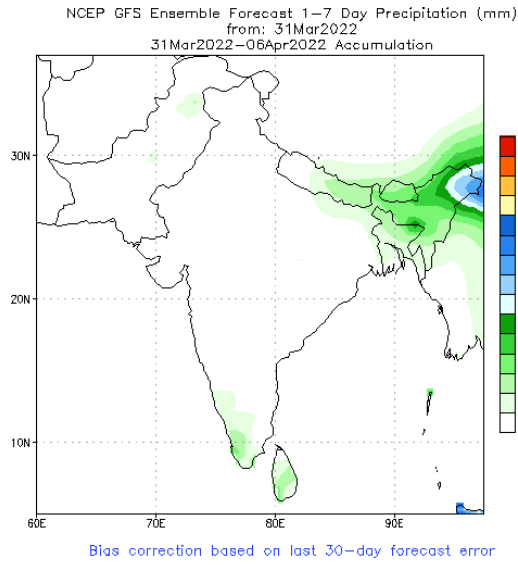
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



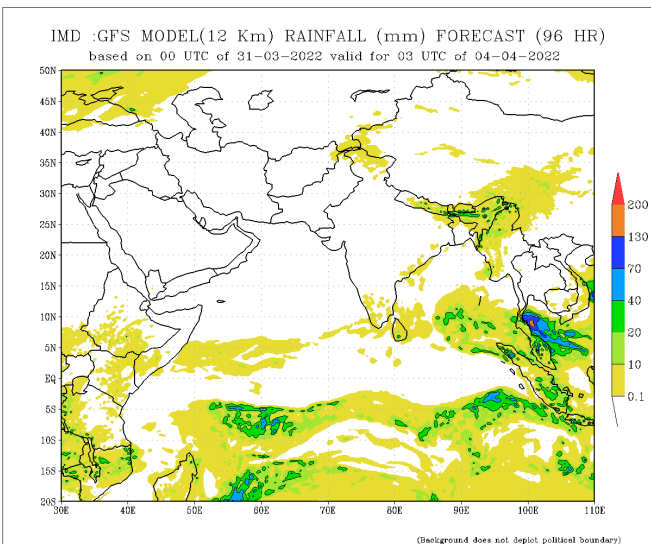
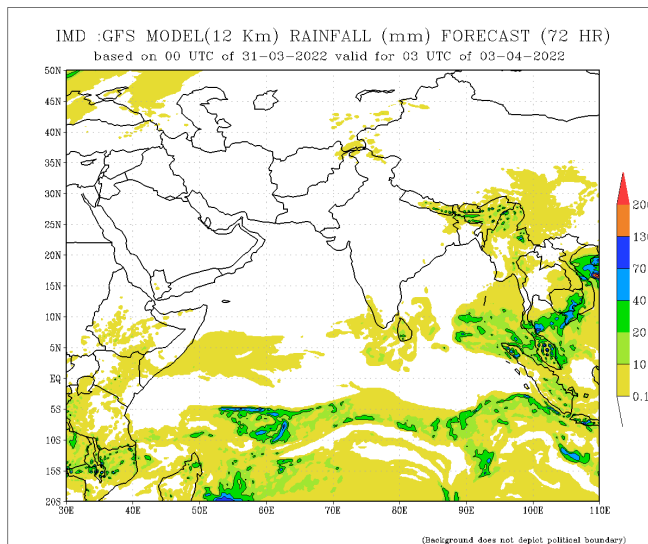
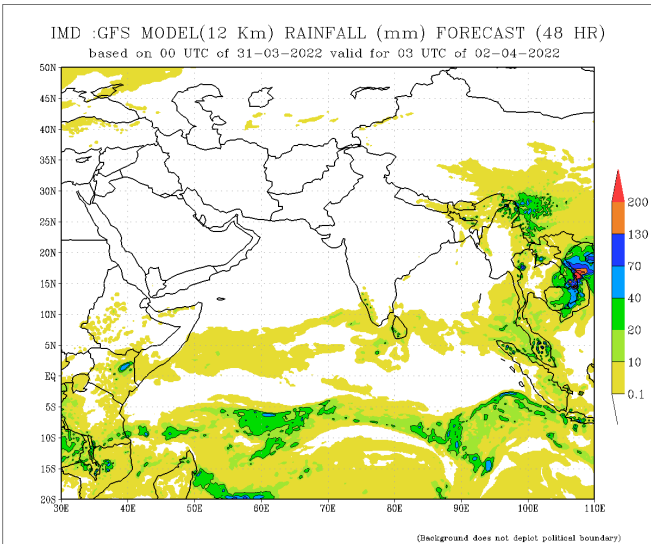
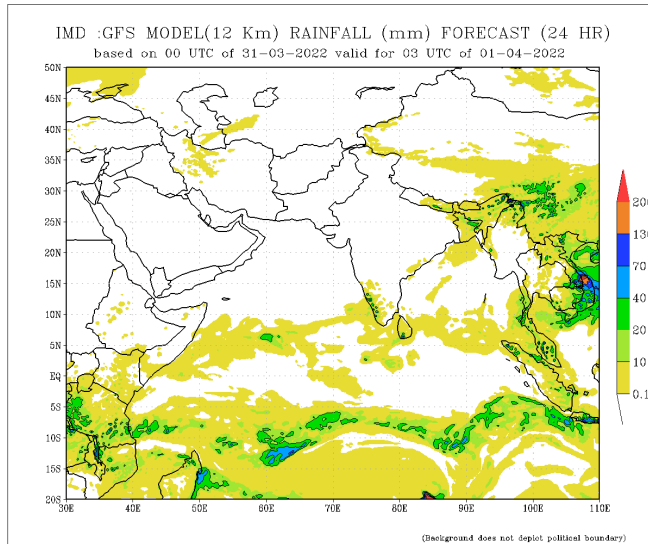
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

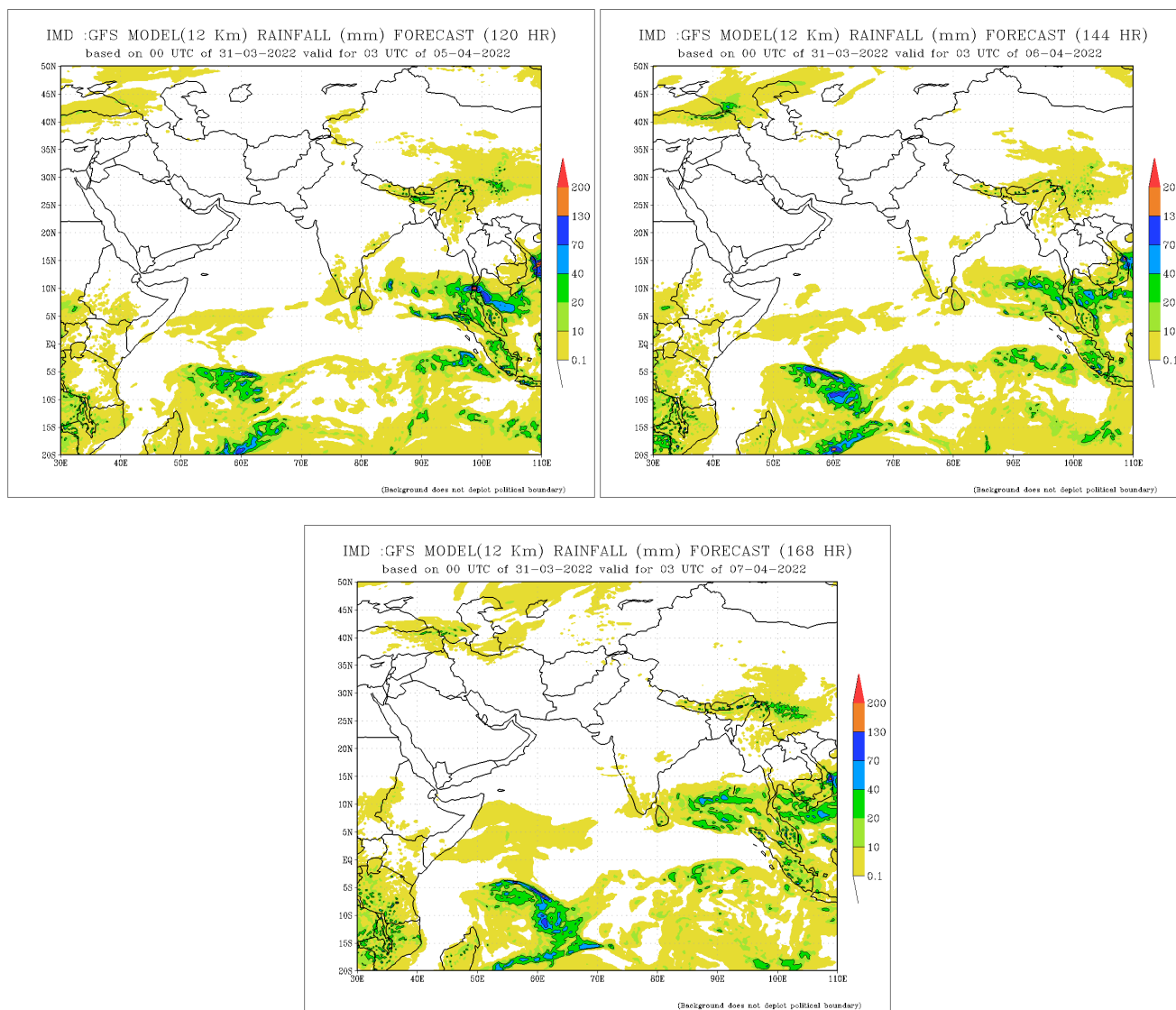


## NCEP GFS 1- 14 Day prediction



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

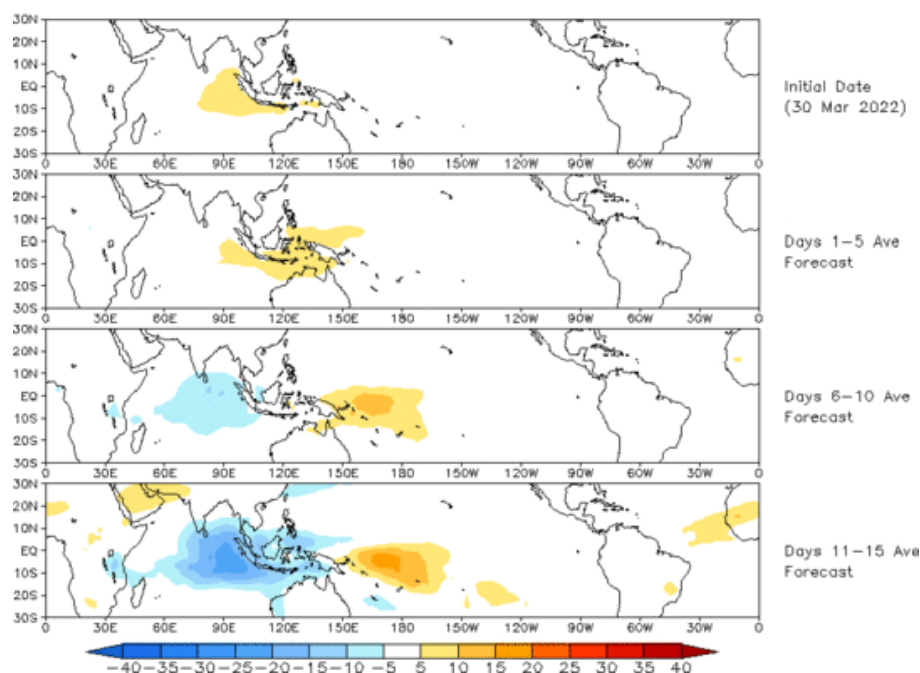




## Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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 anomalous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.

OLR prediction of MJO-related anomalies using CA model  
reconstruction by RMM1 & RMM2 (30 Mar 2022)

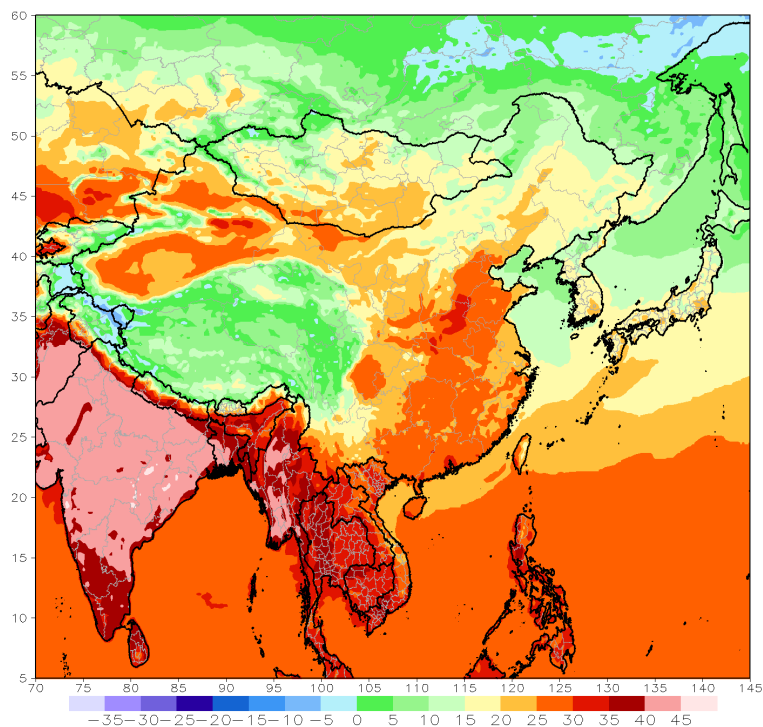


## Weekly Temperature Forecast

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

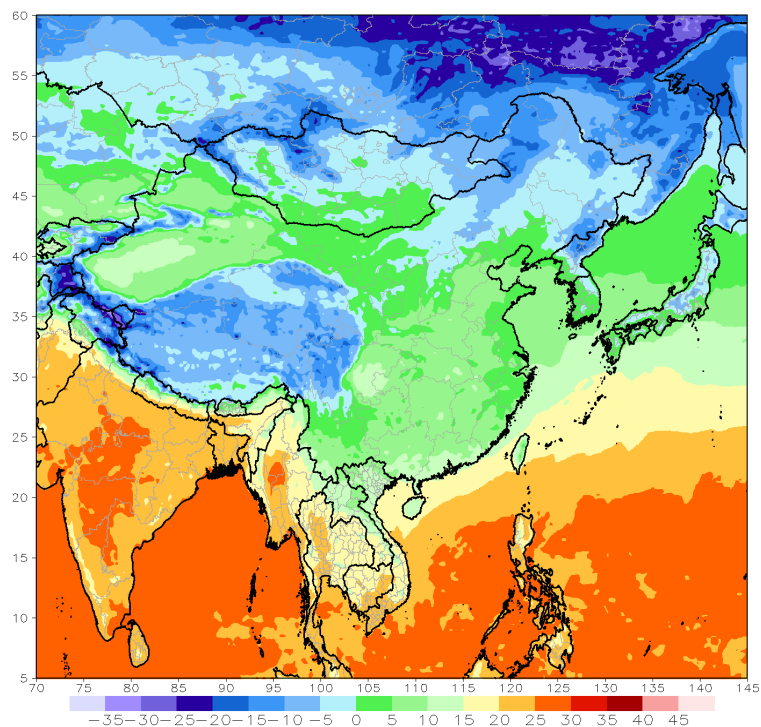
GFS week1 Temperature Max (C)

Period: 18z01Apr2022 - 18z07Apr2022



GFS week1 Temperature Min (C)

Period: 18z01Apr2022 - 18z07Apr2022

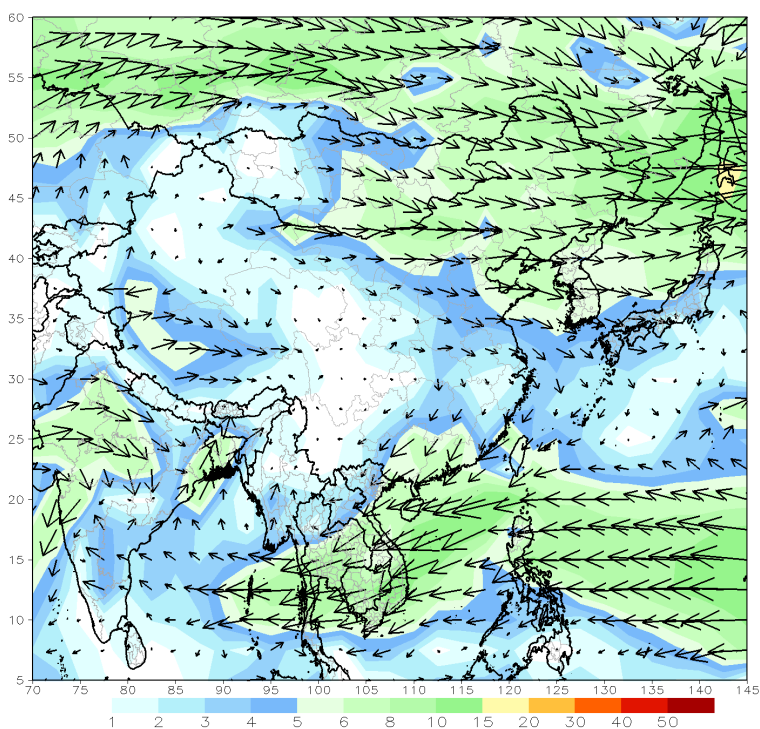


## Weekly Wind Forecast

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

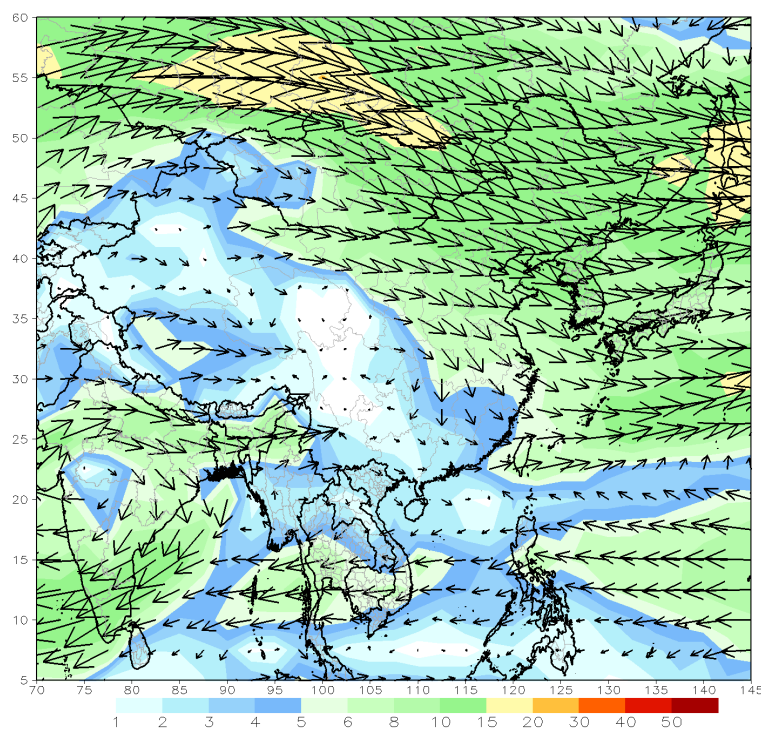
GFS 850mb week1 Mean Vector Wind Total (m/s)

Period: 18z01Apr2022 - 18z07Apr2022



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

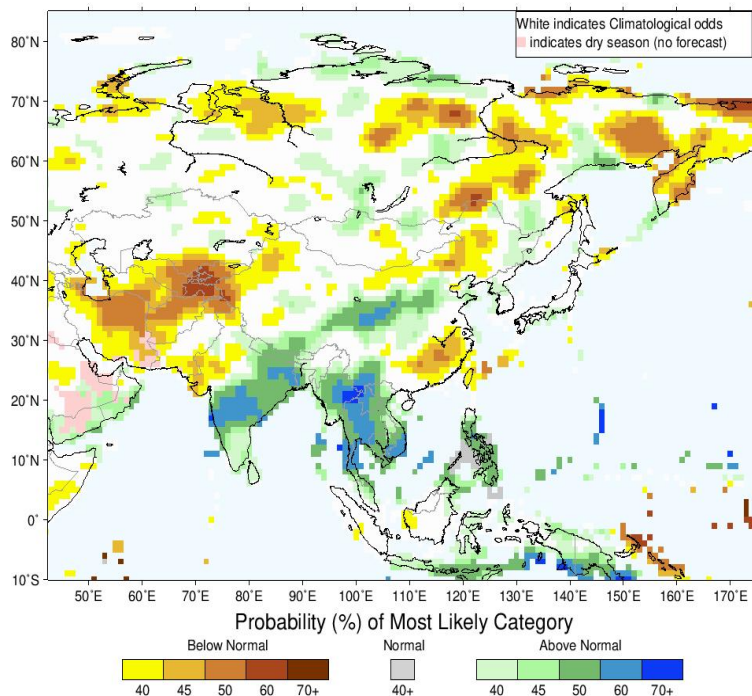
Period: 18z01Apr2022 - 18z07Apr2022



## Seasonal Rainfall and Temperature Forecast

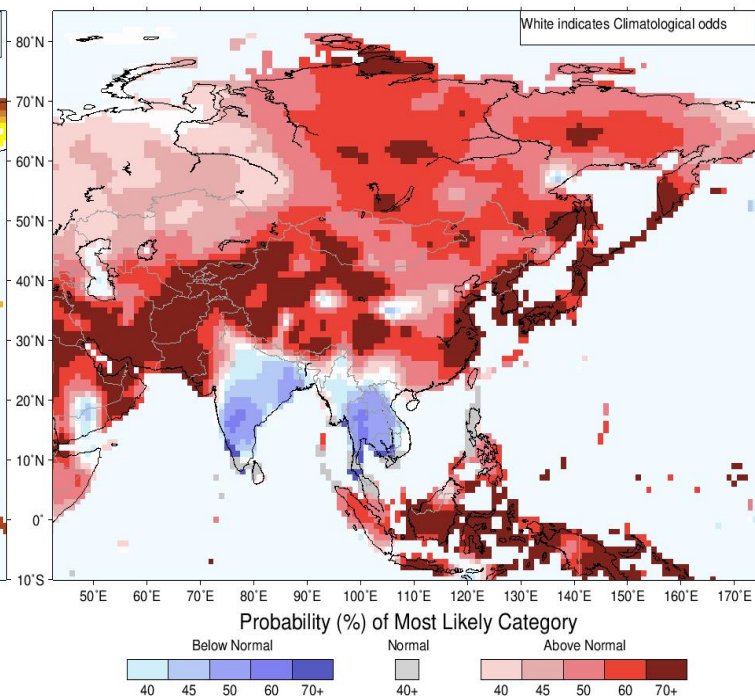
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 April-May-June 2022, Issued March 2022



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for April-May-June 2022, Issued March 2022



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

Federation for Environment, Climate & Technology  
Digana Village,  
Rajawella,  
KY20180,  
SRI LANKA

email: [info@fect.lk](mailto:info@fect.lk)  
phone: (+94) 81 2376746

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