



## Weekly Climate Bulletin for Sri Lanka

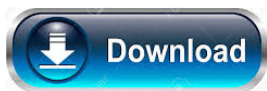
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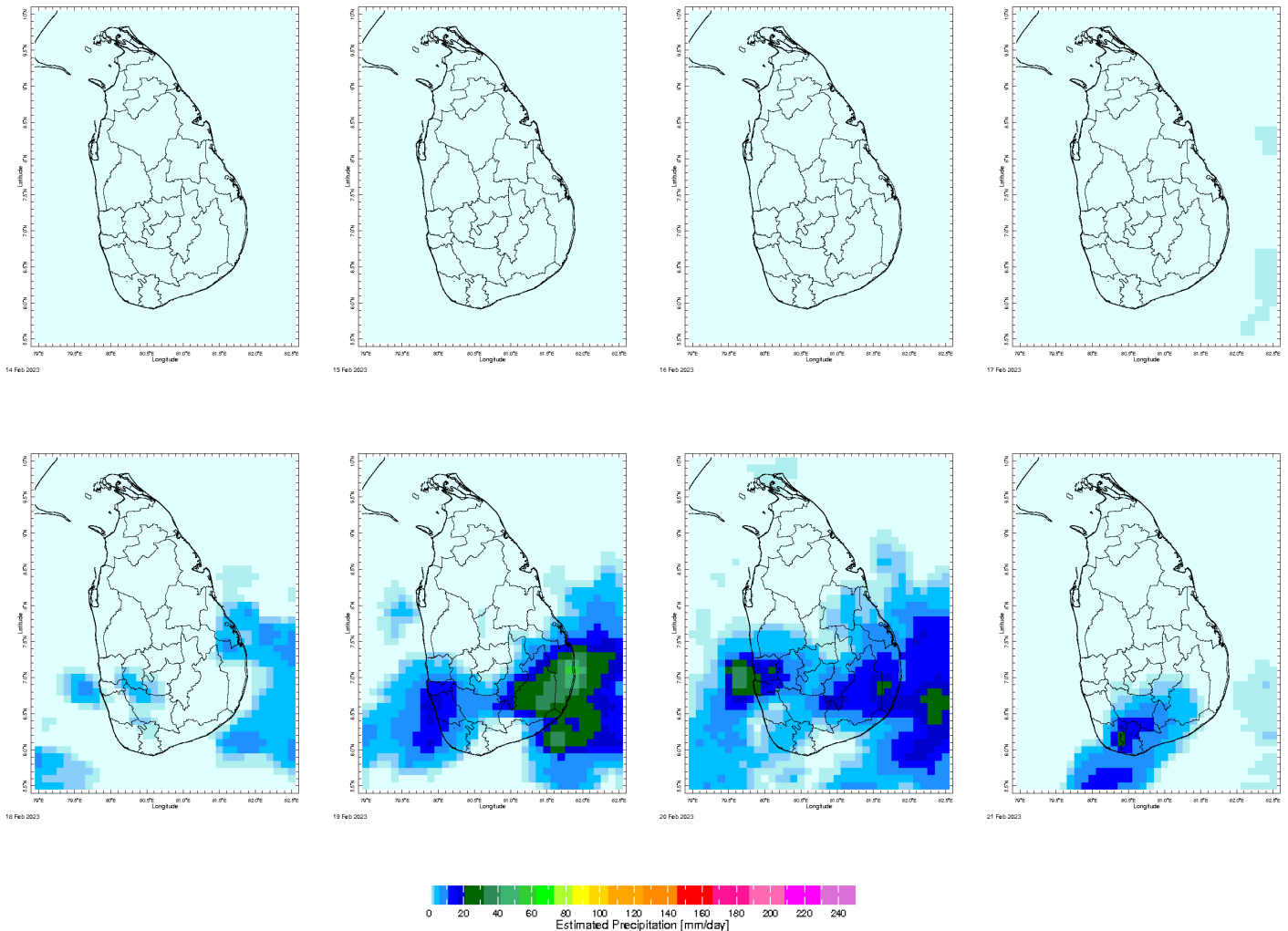
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### MONITORING

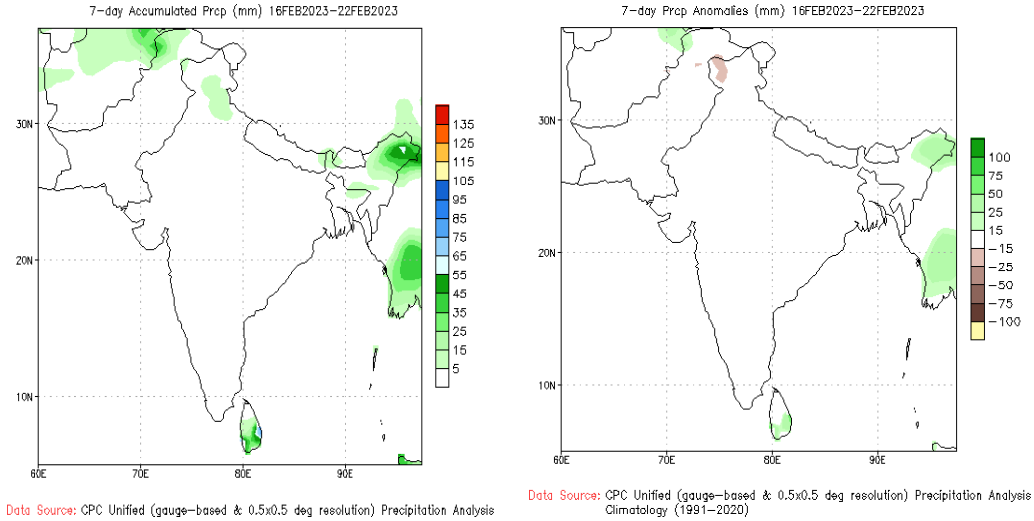
#### Daily Rainfall Monitoring

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



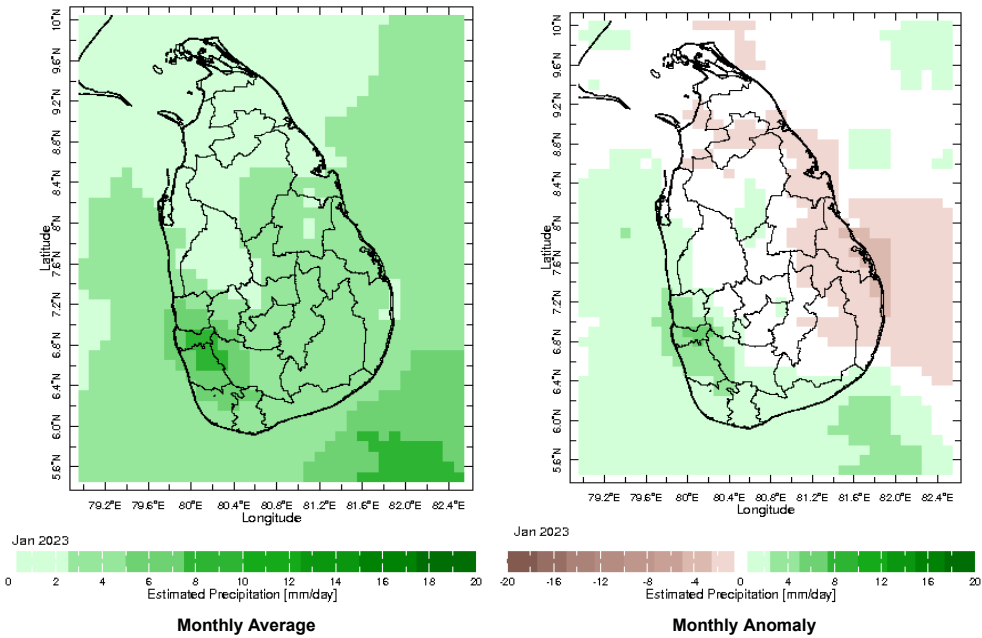
Weekly Rainfall Monitoring

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.

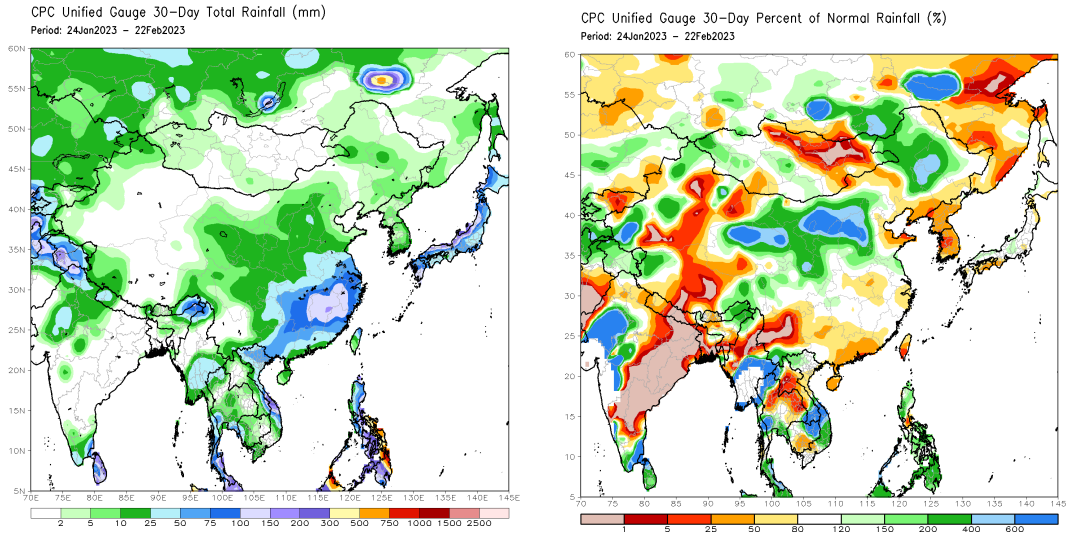


Monthly Rainfall Monitoring

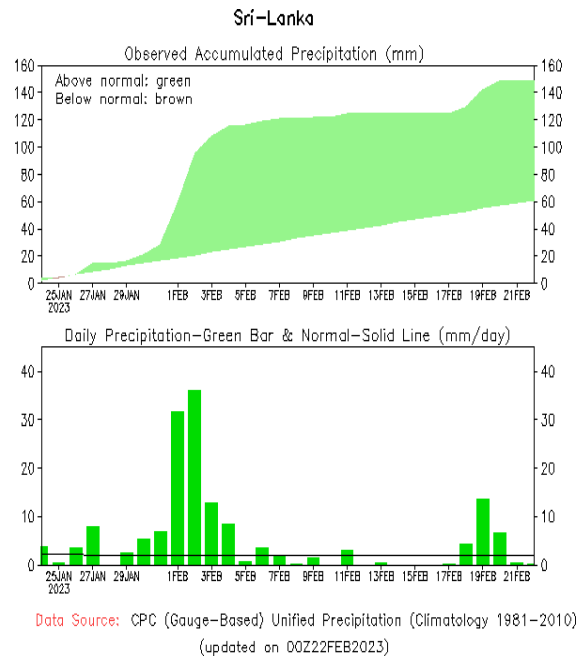
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



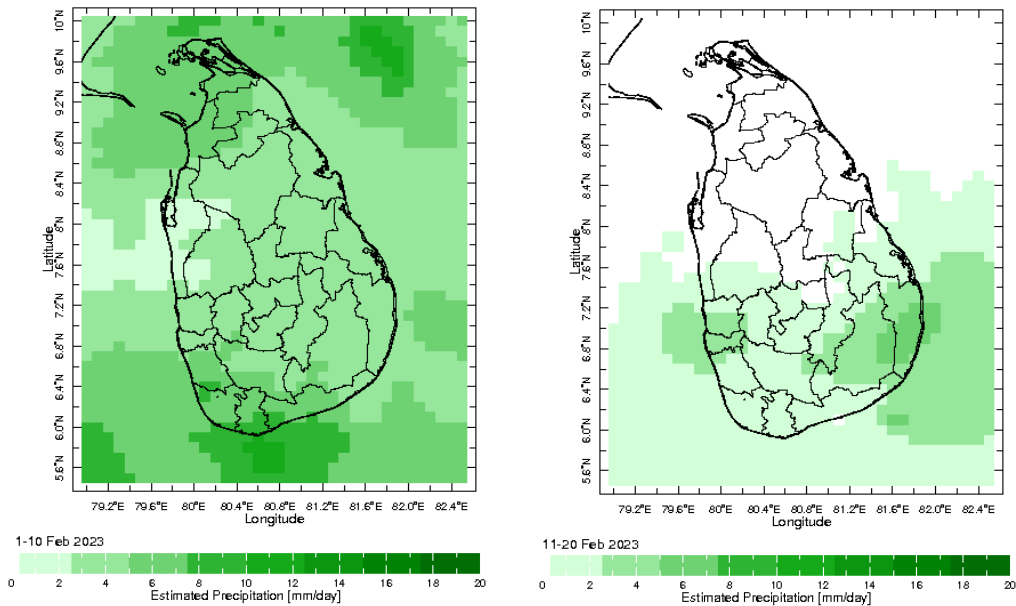
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



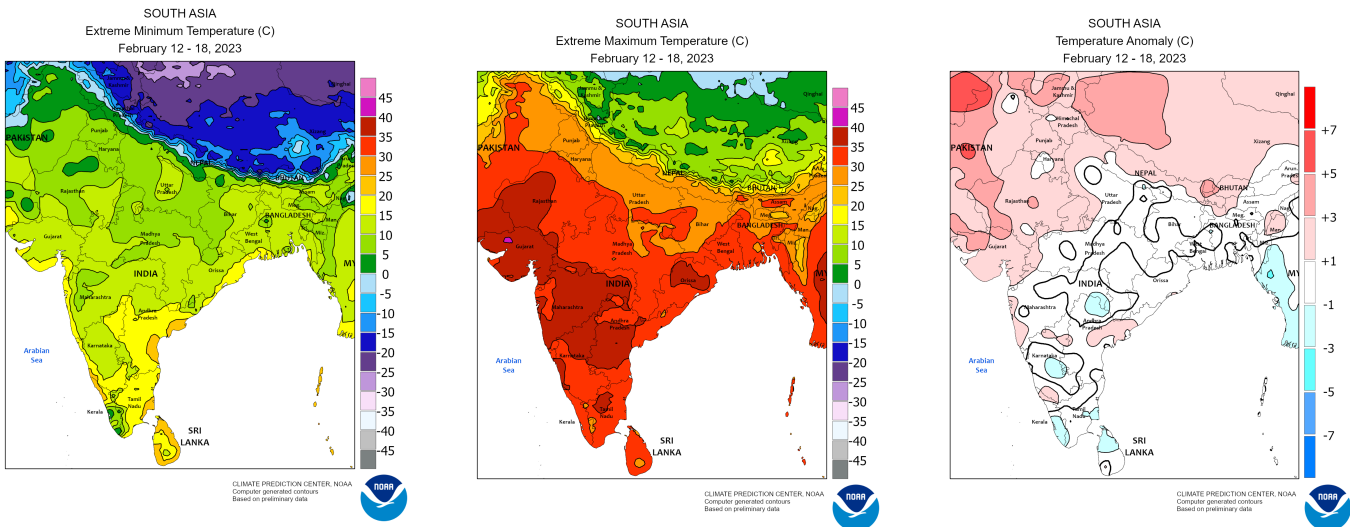
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



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

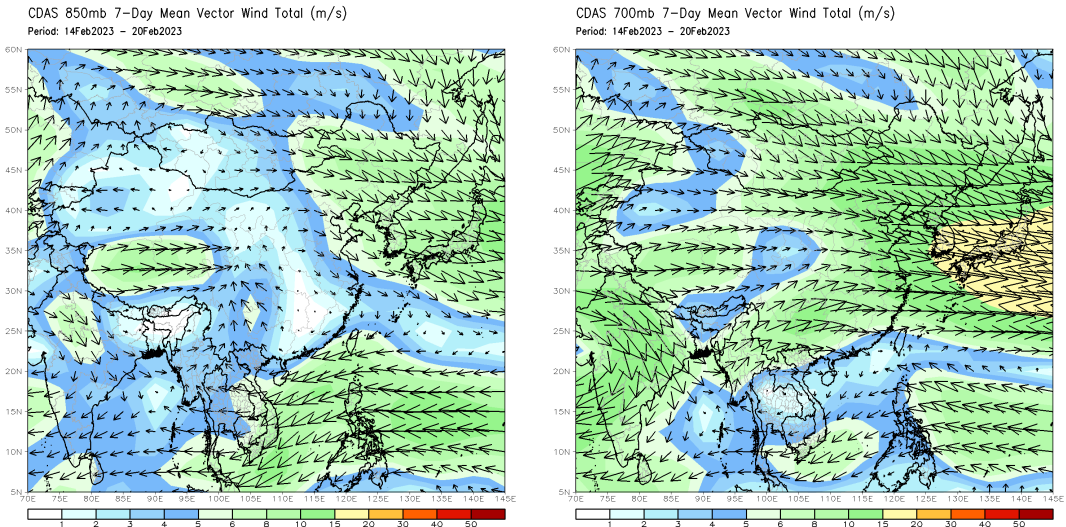


**Weekly Temperature Monitoring**



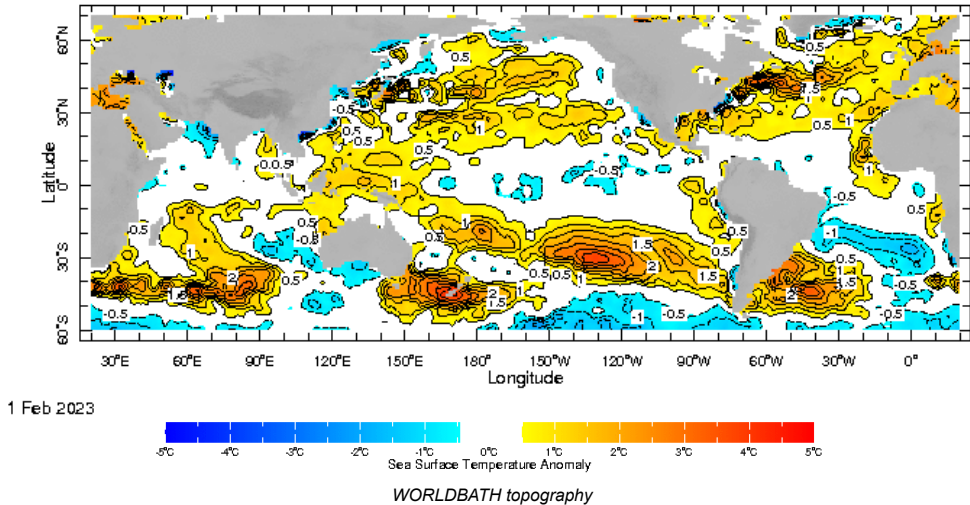
Weekly Wind Monitoring

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.

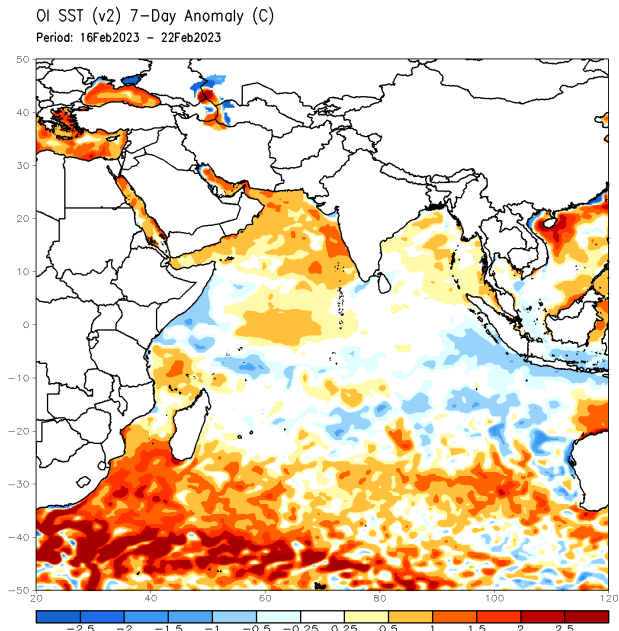


Weekly Average SST Anomalies

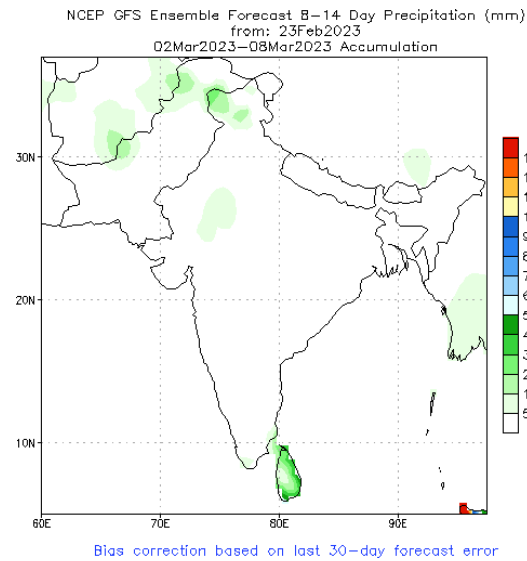
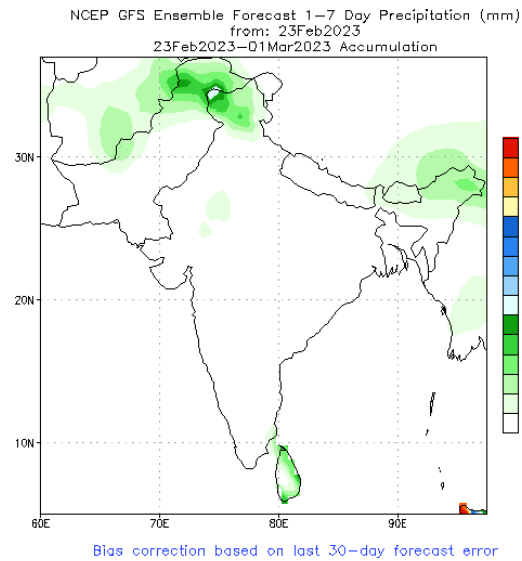
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



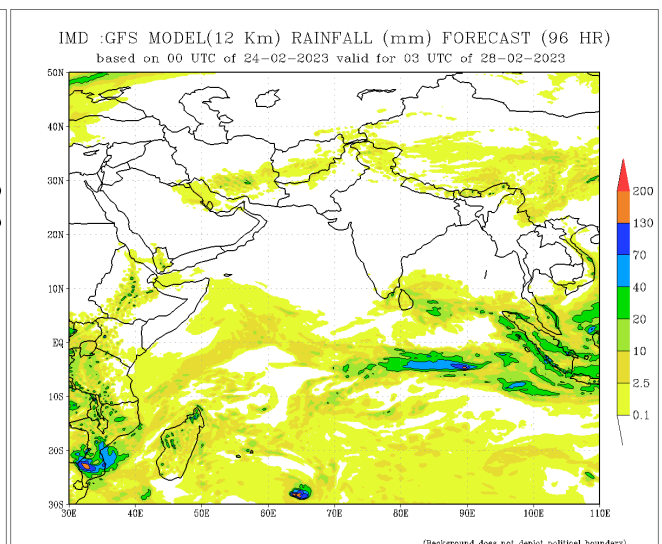
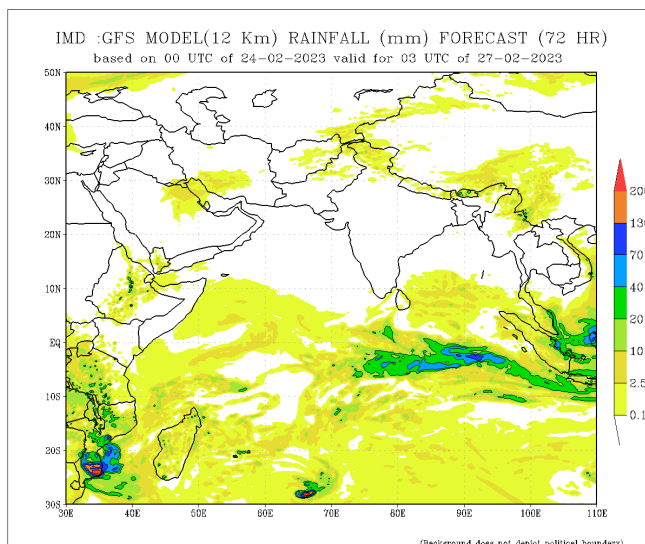
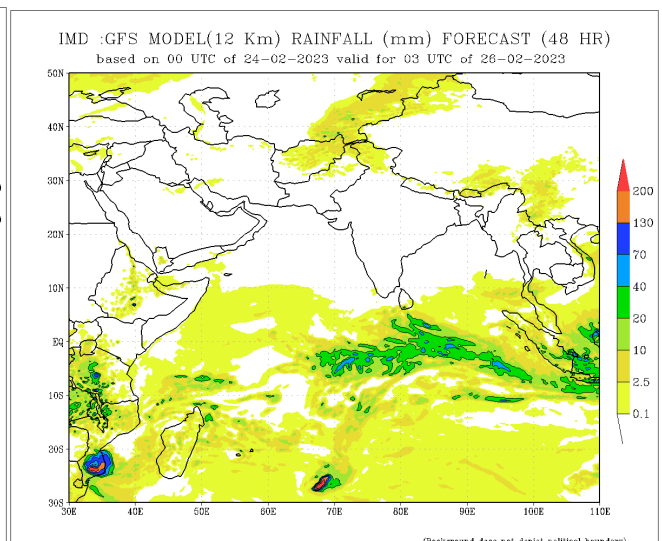
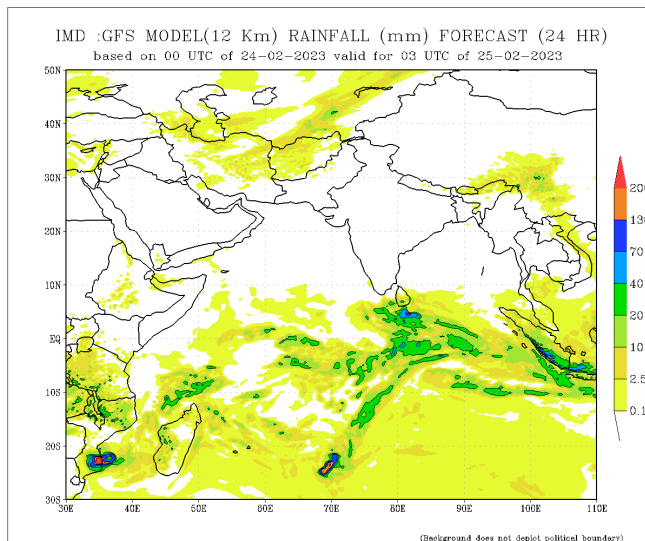
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



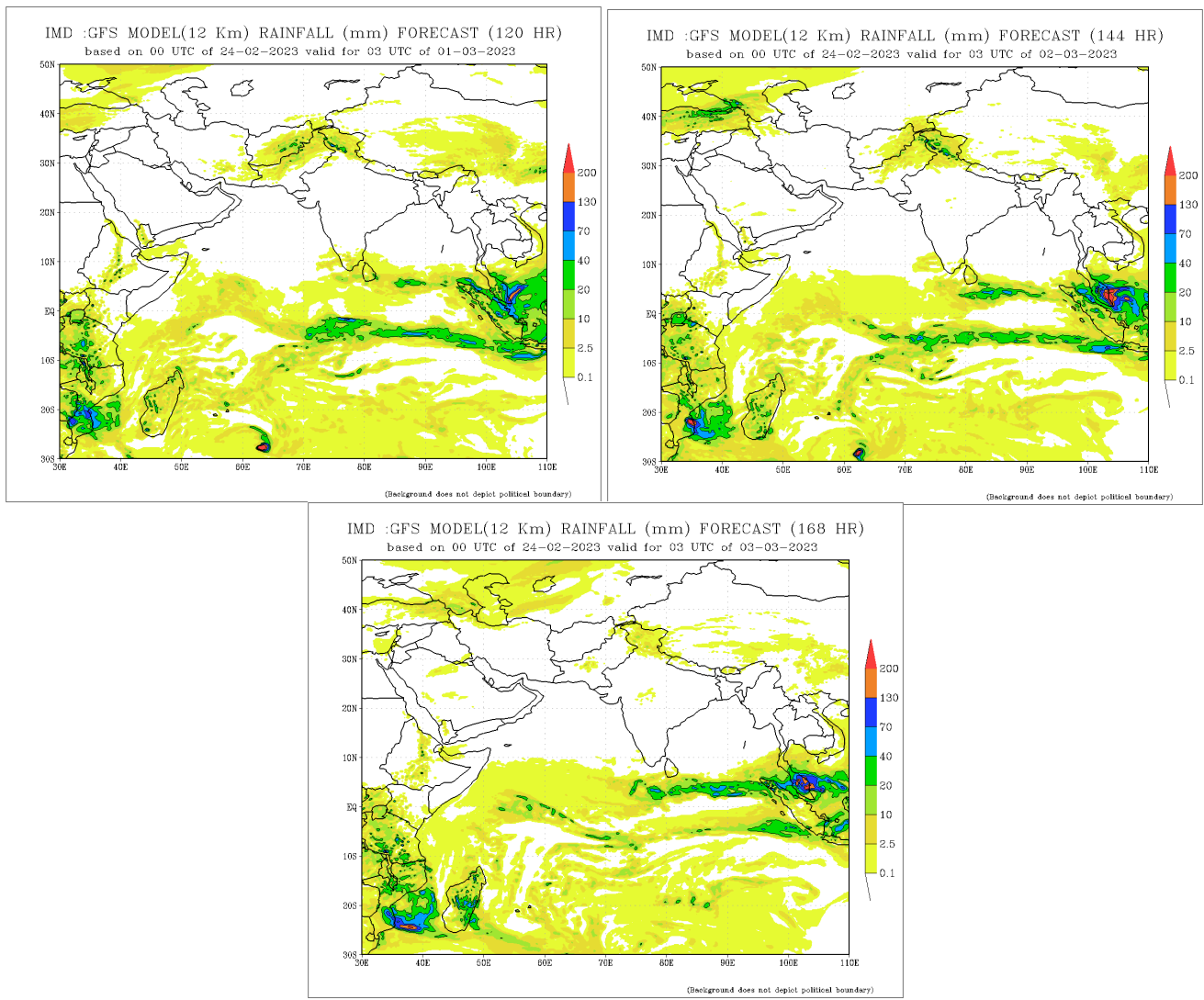
## NCEP GFS 1- 14 Day prediction



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

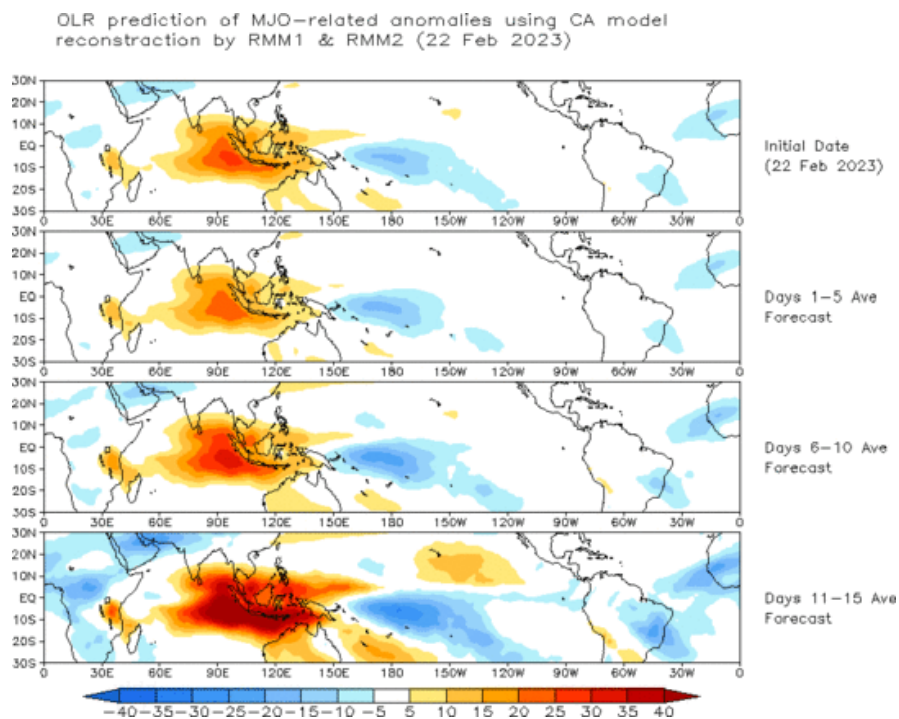






### Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

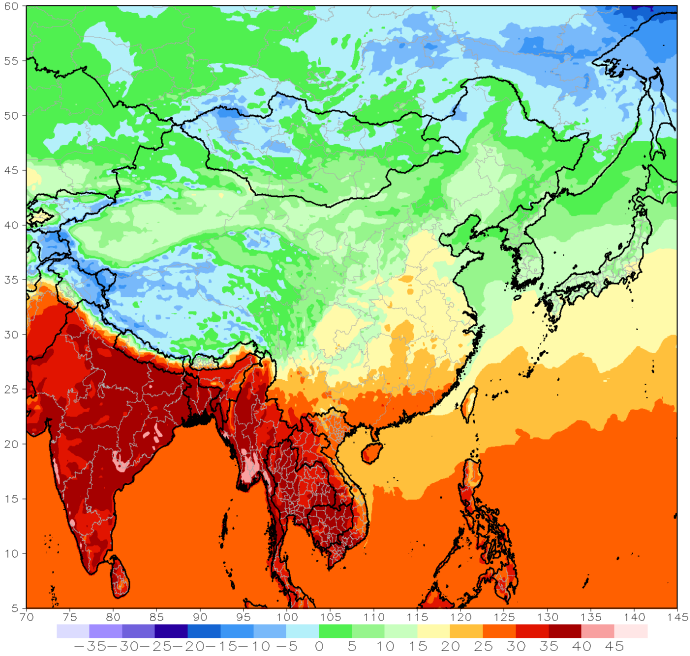
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



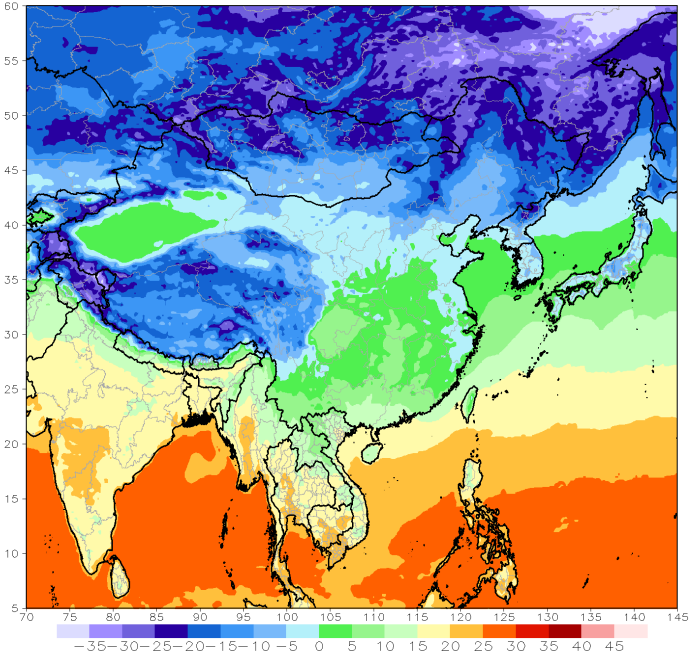
Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)  
Period: 18z24Feb2023 – 18z02Mar2023



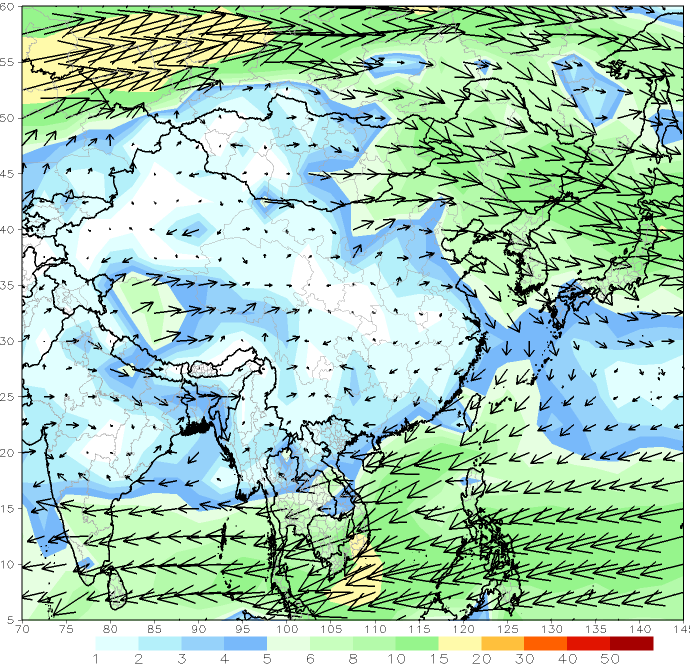
GFS week1 Temperature Min (C)  
Period: 18z24Feb2023 – 18z02Mar2023



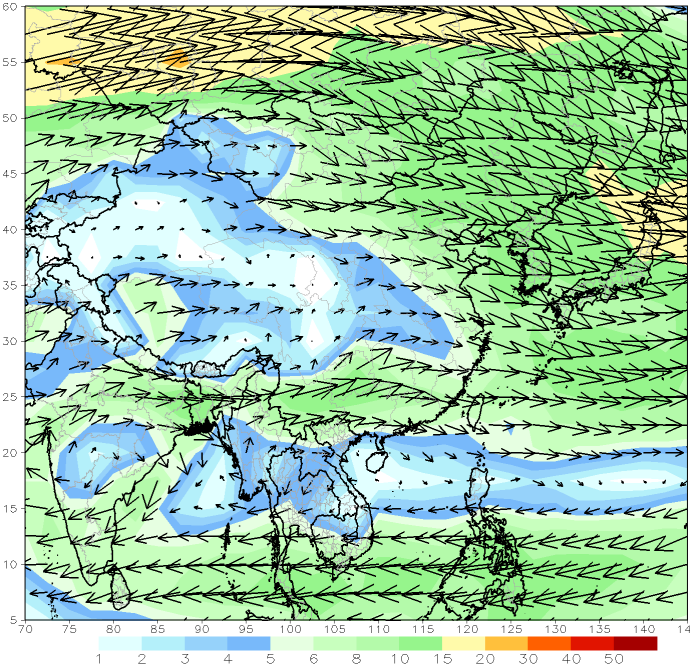
Weekly Wind Forecast

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: 18z24Feb2023 – 18z02Mar2023



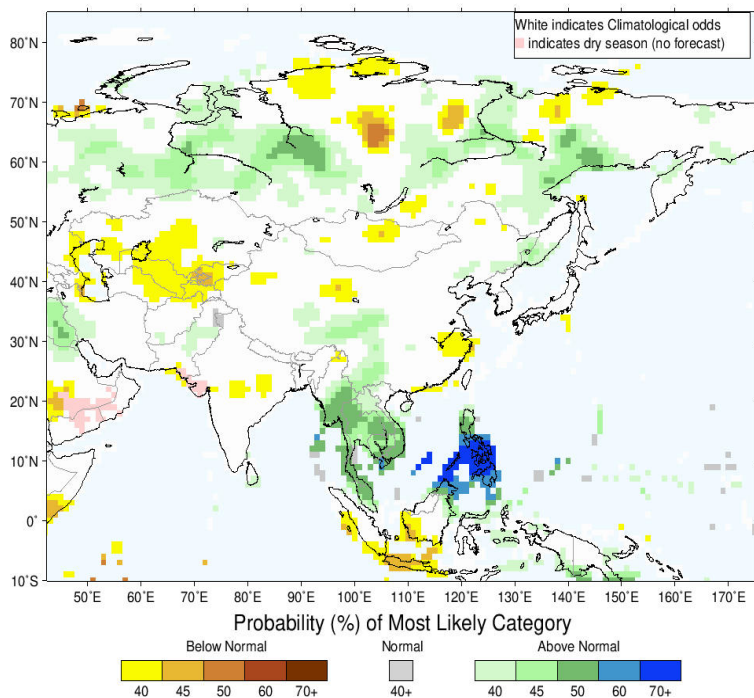
GFS 700mb week1 Mean Vector Wind Total (m/s)  
Period: 18z24Feb2023 – 18z02Mar2023



## Seasonal Rainfall and Temperature Forecast

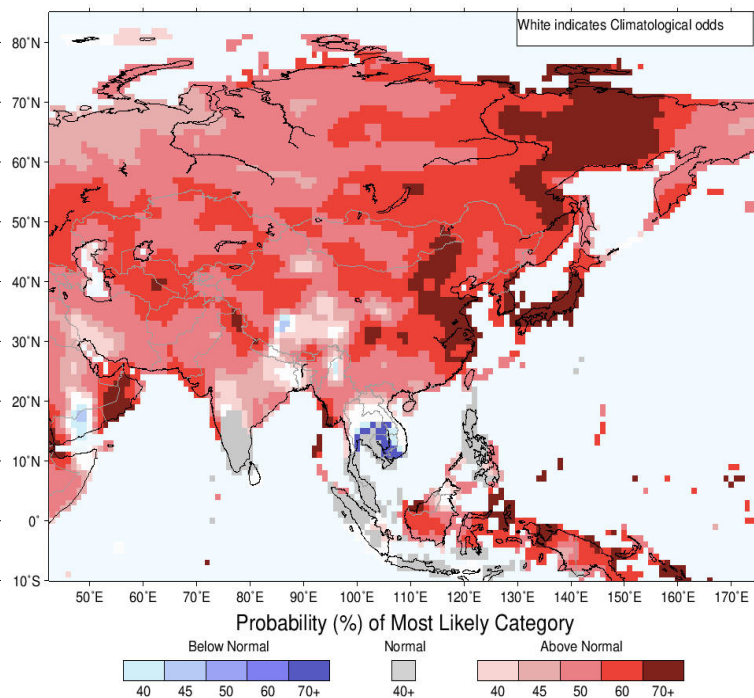
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile 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 2023, Issued February 2023



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for March–April–May 2023, Issued February 2023



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  
76/2 Matala Road, Akurana  
Kandy  
KY20850  
SRI LANKA  
email: [info@fect.lk](mailto:info@fect.lk)  
phone: (+94) 81 2376746

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24 FEBRUARY  
2023

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

## HIGHLIGHTS

### Rainfall Prediction



- Fairly heavy rainfall is predicted for the Southern and Eastern provinces during 23 Feb – 1 Mar.
- The seasonal forecast shows a higher tendency for above-normal precipitation for southern half of the country from March - May, 2023.

### Monitored Rainfalls



- During the last week, maximum daily rainfall over Sri Lanka was 237 mm in Ampara and hydro catchment areas received 3.7 mm on average.
- Highest average rainfall 9.1 mm/day received to Eastern plains of the country.

### Monitored Wind



- From 14 - 20 Feb, up to 6 m/s of north easterly winds were experienced at 850 mb level over the island.
- During 24 Feb- 2 Mar north easterly winds are expected for the country.

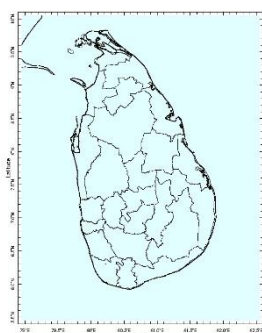
### Monitored Sea & Land Temp



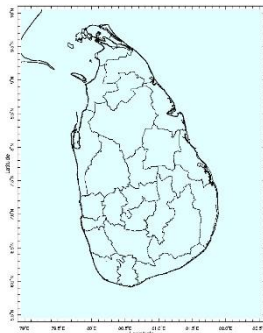
- Sea surface temperature around Sri Lanka was below normal for northern half of the island.
- Land surface temperature remained near normal.

## Monitoring Rainfall

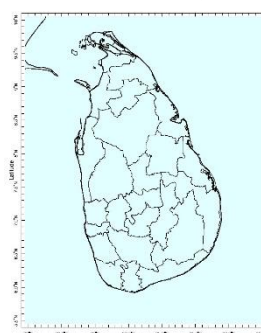
### Daily Estimates for Rainfall from 14<sup>th</sup> February – 21<sup>st</sup> February 2023



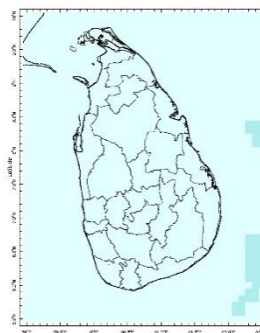
14 February



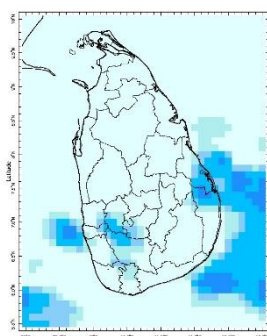
15 February



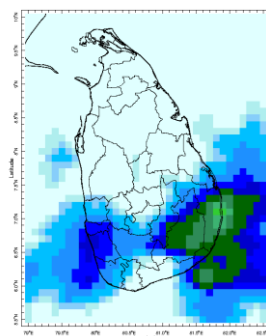
16 February



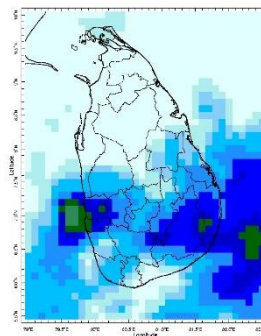
17 February



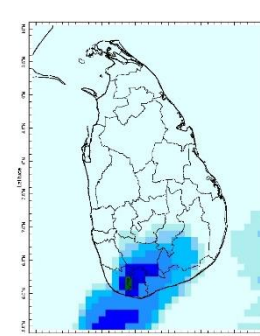
18 February



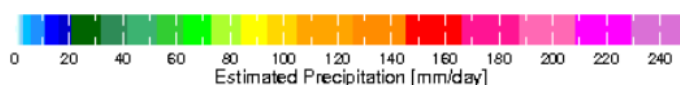
19 February



20 February



21 February



Estimated Precipitation [mm/day]



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)

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## Ocean State *(Text Courtesy IRI)*

### ***Pacific sea state: February 20, 2023***

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean mid - February. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate ENSO-neutral conditions will begin within the next couple of months, and persist through the Northern Hemisphere spring and early summer.

### ***Indian Ocean State***

Sea surface temperature around Sri Lanka was below - 0.5°C to the northern half of the country in 1<sup>st</sup> February, 2023. Across the Indian Ocean, a classical negative Indian Ocean Dipole prevails as is typical during a La Niña.

## Predictions

### Rainfall

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

**From 23<sup>rd</sup> February – 1<sup>st</sup> March:**

Total rainfall by Provinces:

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

**From 2<sup>nd</sup> February – 8<sup>th</sup> March:**

Total rainfall by Provinces:

Rainfall	Provinces
65 mm	Southern, Eastern
45 mm	Sabaragamuwa, Northern
35 mm	North Central, Western, Uva
≤ 25 mm	North Western, Central

### MJO based OLR predictions

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

MJO shall moderately suppress the rainfall during 23<sup>th</sup> February – 4<sup>th</sup> March, and significantly suppress the rainfall during 5<sup>th</sup> March – 9<sup>th</sup> March for Sri Lanka.

## Interpretation

### Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (14<sup>th</sup> February – 21<sup>st</sup> February) = 4.5 mm

Rmax: 107.2 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	0.4 mm
Eastern	9.1 mm
Western	4.9 mm
Southern Plains	0.9 mm

The Hydro Catchment Areas recorded 3.7 mm of average rainfall for the last week

Rmax: 55.8 mm & Rmin: 0.0 mm.

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

**Temperatures:** The temperature anomalies were below normal for the Northern half of the island and above normal for the Sabaragamuwa province, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (23<sup>rd</sup> February – 1<sup>st</sup> March), Fairly heavy rainfall (55 mm) is predicted for the Southern and Eastern provinces, and less rainfall is expected for rest of the country.

**Temperatures:** The temperature will remain above normal for some parts of the Sabaragamuwa, North western, North central and Uva provinces and below normal for Nuwara Eliya district during 25<sup>th</sup> February – 5<sup>th</sup> March.

**Teleconnections:** ENSO-neutral conditions will begin within the next couple of months, and persist through the Northern Hemisphere spring and early summer.

MJO shall moderately suppress the rainfall during 23<sup>th</sup> February – 4<sup>th</sup> March, and significantly suppress the rainfall during 5<sup>th</sup> March – 9<sup>th</sup> March for Sri Lanka.

**Seasonal Precipitation:** The precipitation forecast for the March-April-May 2023 season shows a higher tendency of above-normal precipitation for southern half of the country.

## 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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