Week of
4 Feb - 11 Feb
2022

# CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

## HIGHLIGHTS

**Rainfall Prediction**

- *Fairly heavy rainfall is predicted for Eastern province from 5th Feb – 8th Feb and dry elsewhere. Greater likelihood of wet tendency is predicted for Sri Lanka from Feb - Apr - this is the driest period in SL.*

**Monitored Rainfalls**

- *Heavy rainfall was experienced in the Sabaragamuwa province with max of 116.6 mm in Ratnapura on 26th Jan but it was mostly dry on other days and in other places.*

**Monitored Wind**

- *From 24th Jan - 31st Jan, up to 45 km/h Northeasterlies were experienced across the island.*

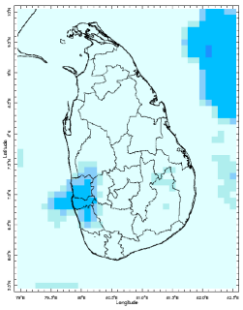
**Monitored Sea Surface**

- *Sea surface temperatures were 0.5$^0$C above normal in the Northern and Southern seas and neutral around the rest of the island.*

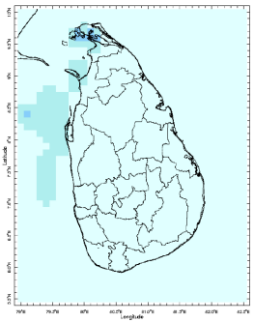
## Monitoring

### Rainfall

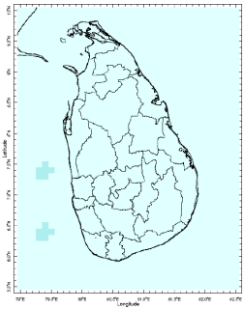
***Daily Estimates for Rainfall from 24th January – 31st January 2022***



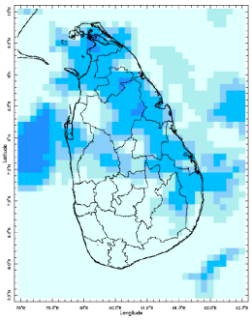
**24 January**



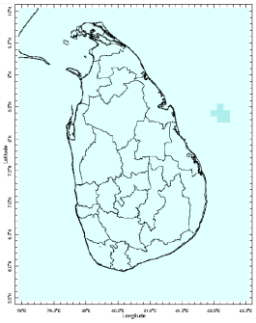
**25 January**



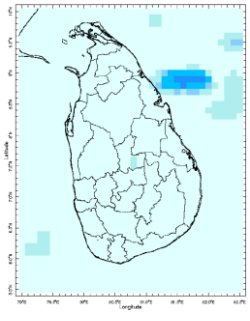
**26 January**



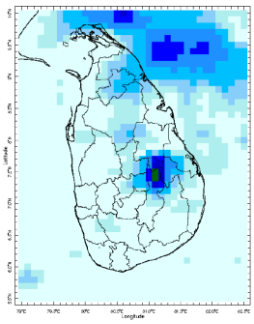
**27 January**



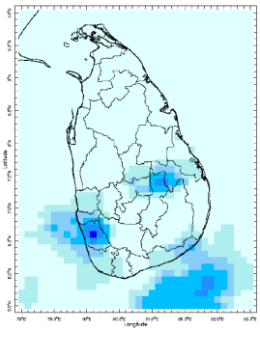
**28 January**



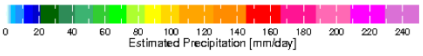
**29 January**



**30 January**



**31 January**




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 E mail: info@fect.lk LI: www.linkedin.com/in/fectlk
FB: www.facebook.com/fectlk TW: www.twitter.com/fectlk

## Ocean State *(Text Courtesy IRI)*

### *Pacific sea state: January 26, 2022*

Equatorial sea surface temperatures (SSTs) are below average across the East Central and Eastern Pacific Ocean in late-January. A large majority of the models indicate La Niña to prevail (with Negative Indian Ocean Dipole) through Northern Hemisphere spring 2022. A transition to ENSO-neutral is expected by April-June 2022.

### *Indian Ocean State*

Sea surface temperatures were $0.5^0$C above normal in the Northern and Southern seas and neutral around the rest of the island.

# Predictions

## Rainfall

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

**From 2nd February – 8th February:**

Total rainfall by Provinces:

| Rainfall | Provinces |
|---|---|
| 85 mm | Eastern |
| 45 mm | North Central, Uva |
| 35 mm | Northern, Southern |
| 25 mm | Central, Sabaragamuwa, Western |
| 15 mm | North Western |

**From 9th February – 15th February:**

Total rainfall by Provinces:

| Rainfall | Provinces |
|---|---|
| 75 mm | Eastern |
| 35 mm | Northern, North Central, Uva |
| 25 mm | Central |
| 15 mm | Sabaragamuwa, Southern, Western |
| 5 mm | North Western |

## MJO based OLR predictions

### *For the next 15 days:*

MJO shall be active from 2nd February - 11th February giving slightly enhanced rainfall to the entire island and shall be neutral during 12st February – 16th February.

# Interpretation

## Monitoring

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

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

***Temperatures:*** The temperature anomalies were $1^0$C – $3^0$C below neutral in some parts of the Eastern, North Central, North Western, Sabaragamuwa, Uva and Western provinces and neutral for the rest of the island last week, driven by the warm SST's.

## Predictions

***Rainfall:*** During the next week ($5^{th}$ February – $8^{th}$ February) fairly heavy rainfall is predicted for Eastern province.

***Temperatures:*** The temperature remains slightly above normal in the North Western, Sabaragamuwa, Southern, Uva and Western provinces during $5^{th}$ February – $11^{th}$ February.

***Teleconnections:***

La Nina - The SST forecast indicates that La Niña is prevailing (with Negative Indian Ocean Dipole) through the Northern Hemisphere spring.

MJO shall be active from $2^{nd}$ February - $11^{th}$ February giving slightly enhanced rainfall to the entire island and shall be neutral during $12^{st}$ February – $16^{th}$ February.

***Seasonal Precipitation:***

The precipitation forecast for the Feb-Apr season show enhanced probabilities of above-normal precipitation over Sri Lanka.

**Understanding the Forecast**

| | **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, [1] International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.

Federation for Environment, Climate & Technology

FEDERATION FOR ENVIRONMENT, CLIMATE AND TECHNOLOGY

www.fect.lk www.climate.lk

# Weekly Climate Bulletin for Sri Lanka

## Inside This Issue

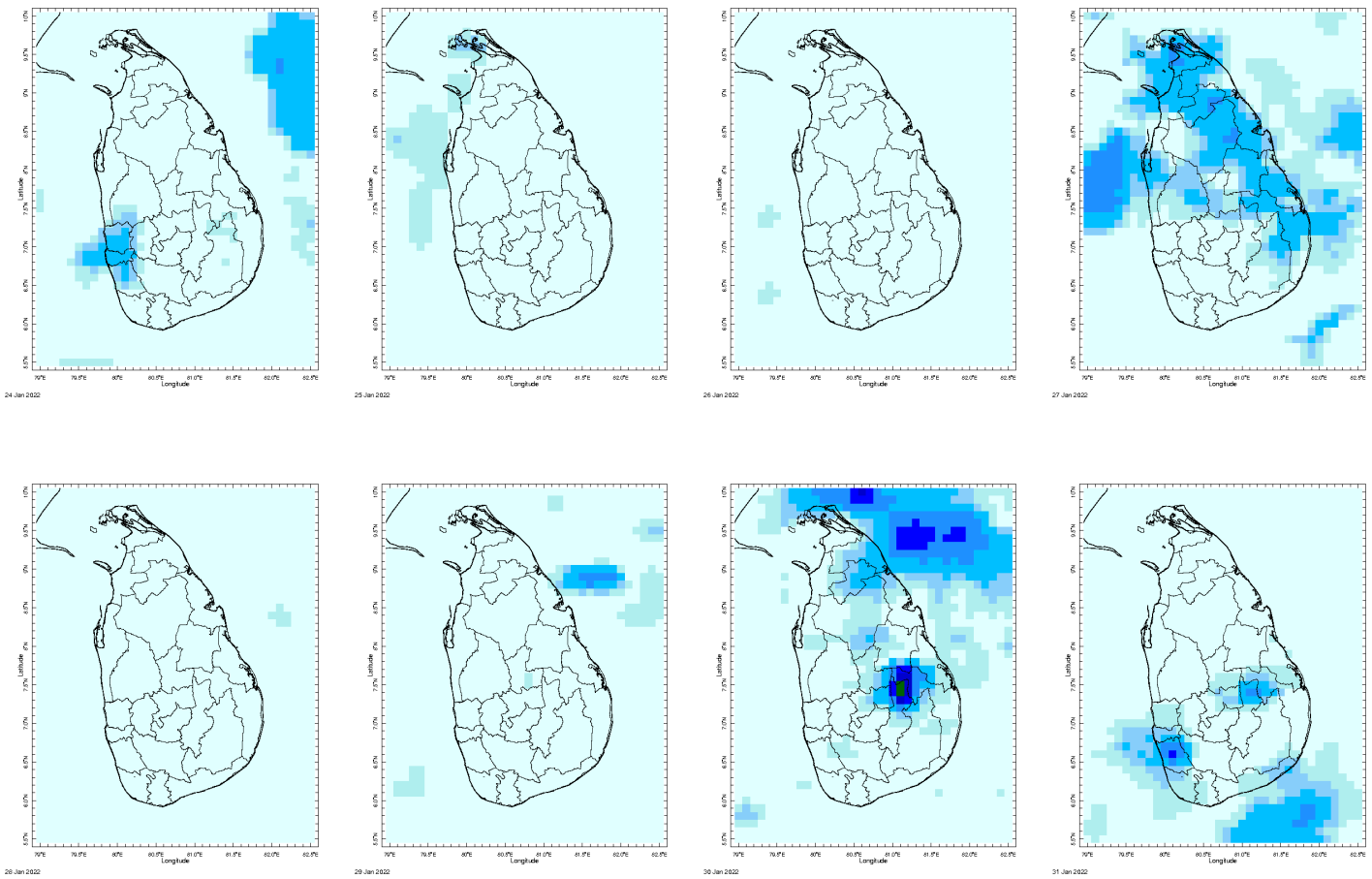
1. **Monitoring**
   a. Daily Rainfall Monitoring
   b. Weekly Rainfall Monitoring
   c. Monthly Rainfall Monitoring
   d. Dekadal (10 Day) Satellite Derived Rainfall Estimates
   e. Weekly Temperature Monitoring
   f. Weekly Wind Monitoring
   g. Weekly Average SST Anomalies
2. **Predictions**
   a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
   b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
   c. MJO Related OLR Forecast
   d. Weekly Temperature Forecast
   e. Weekly Wind Forecast
   f. Seasonal Predictions from IRI

Download

## MONITORING

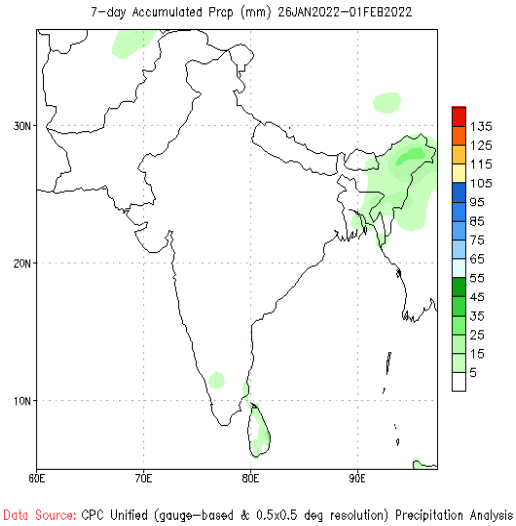
### Daily Rainfall Monitoring

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

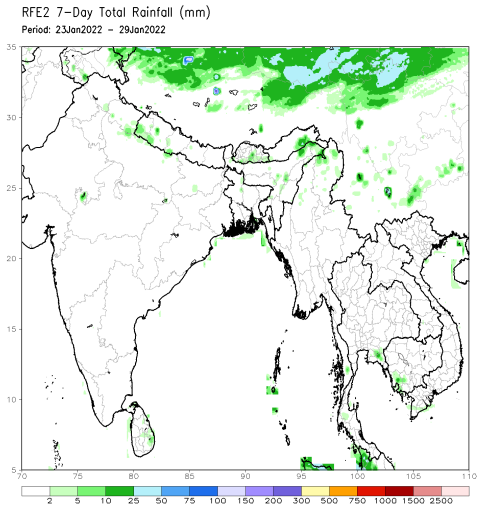


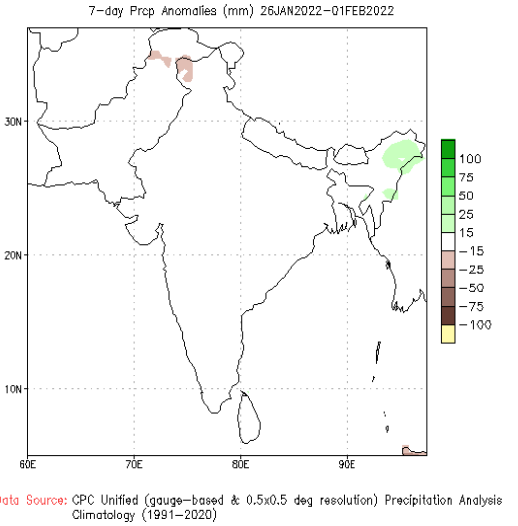
## Weekly Rainfall Monitoring

**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.**

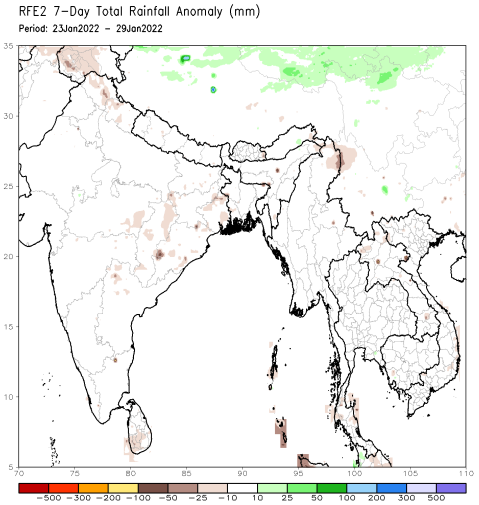



Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



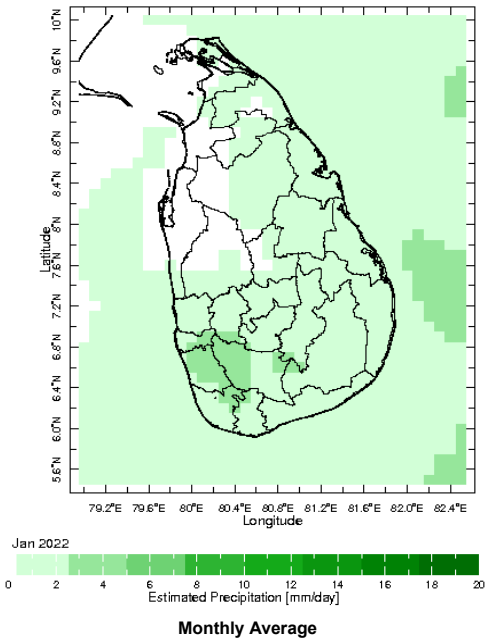




Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1991-2020)

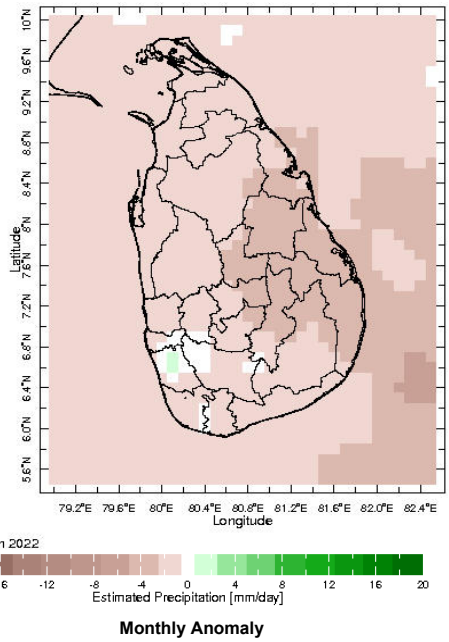



## Monthly Rainfall Monitoring

**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**

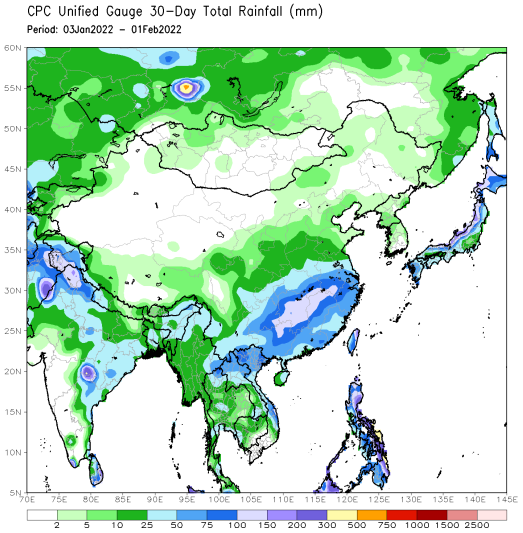


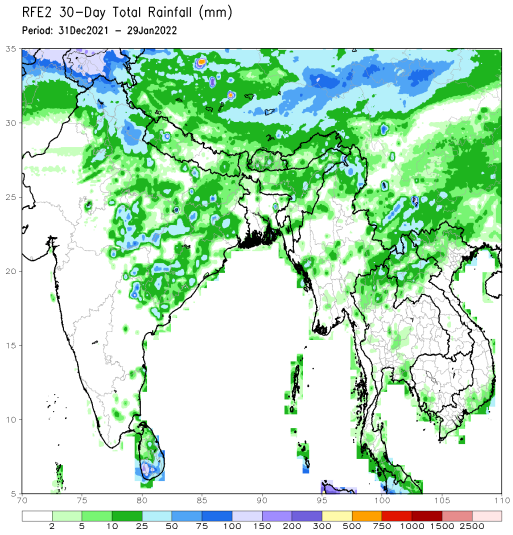

**Monthly Average**

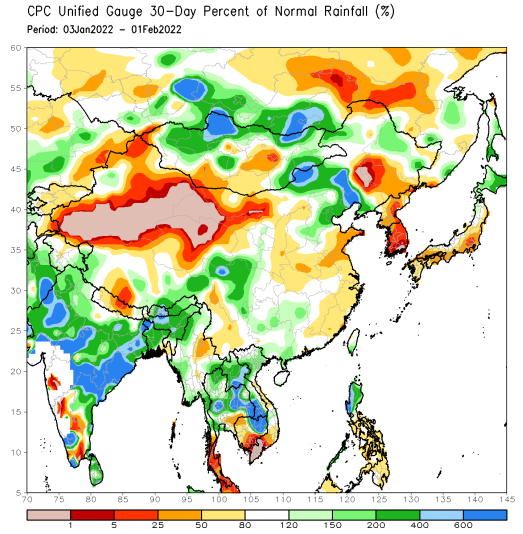


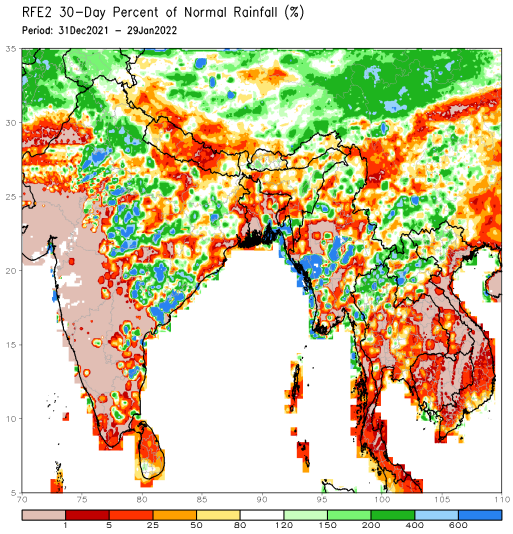

**Monthly Anomaly**

**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.**

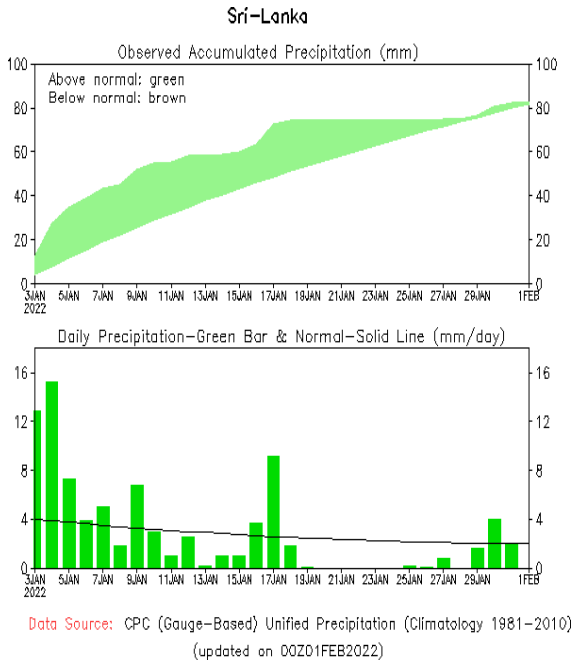


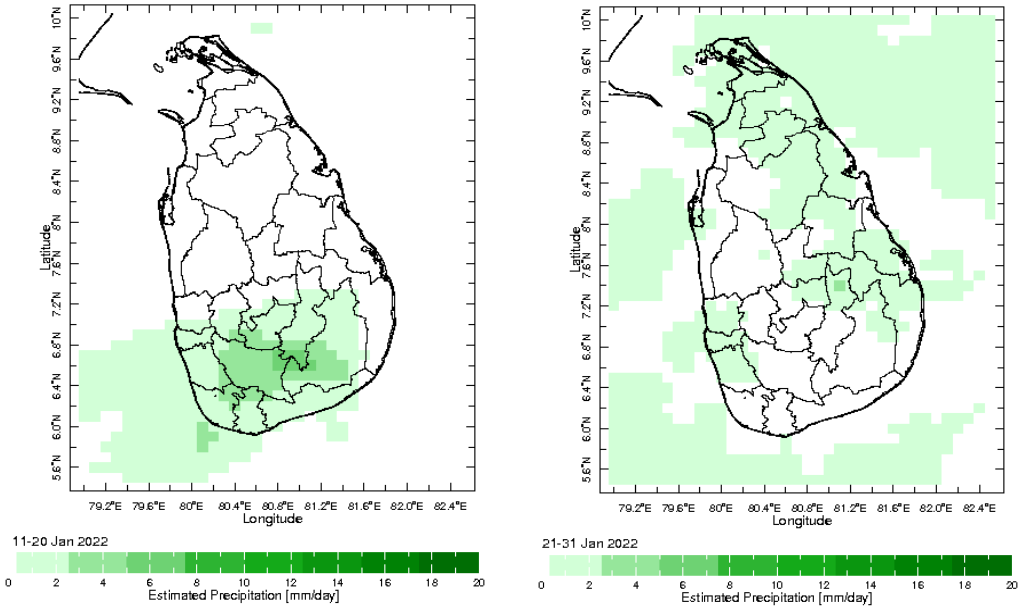



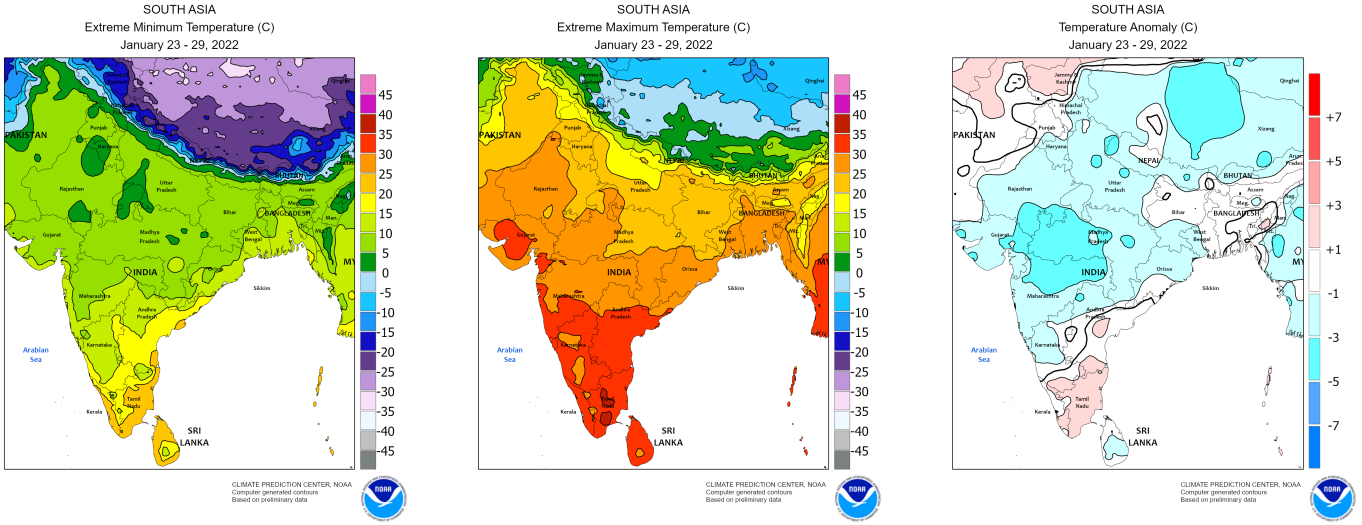

**The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.**



## Dekadal (10 Day) Satellite Derived Rainfall Estimates

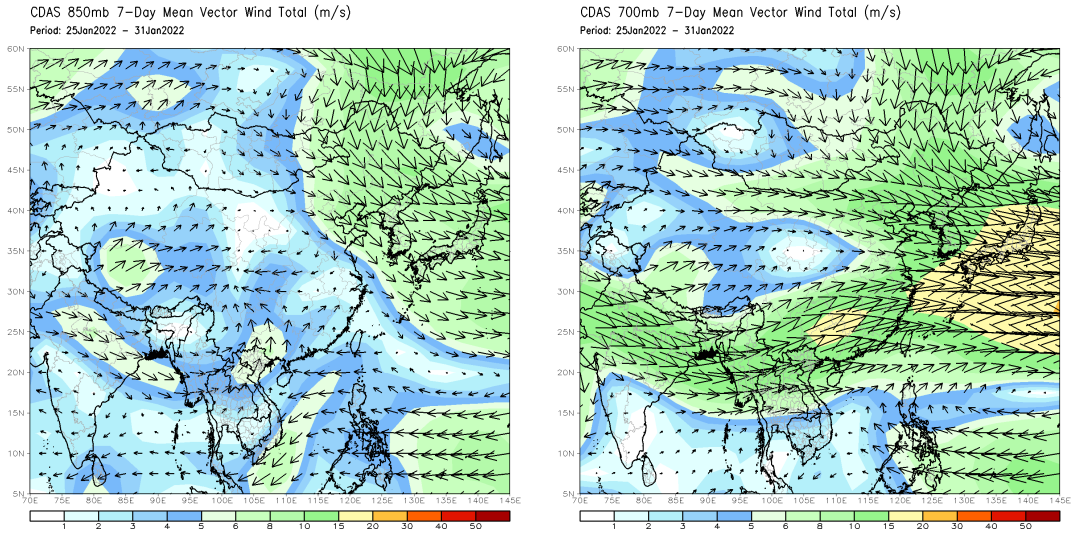



## Weekly Temperature Monitoring



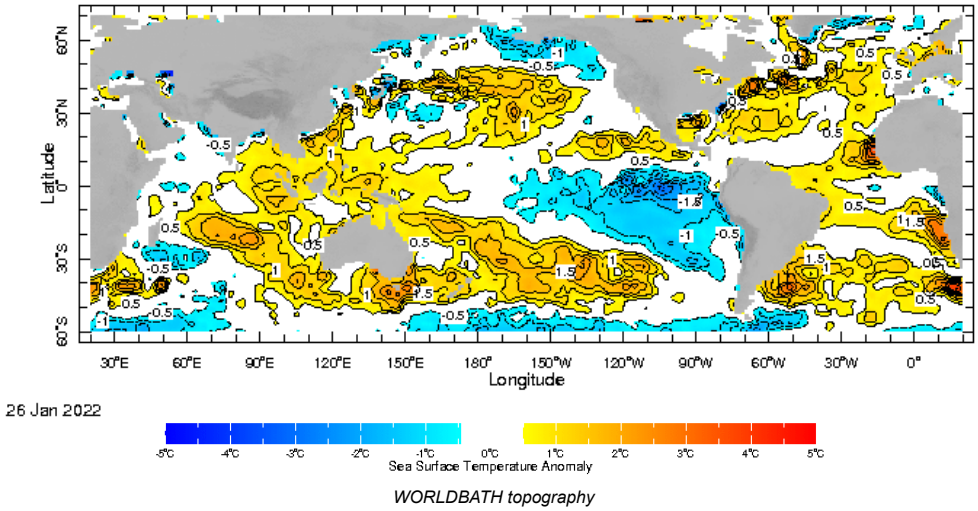

## Weekly Wind Monitoring

**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.**

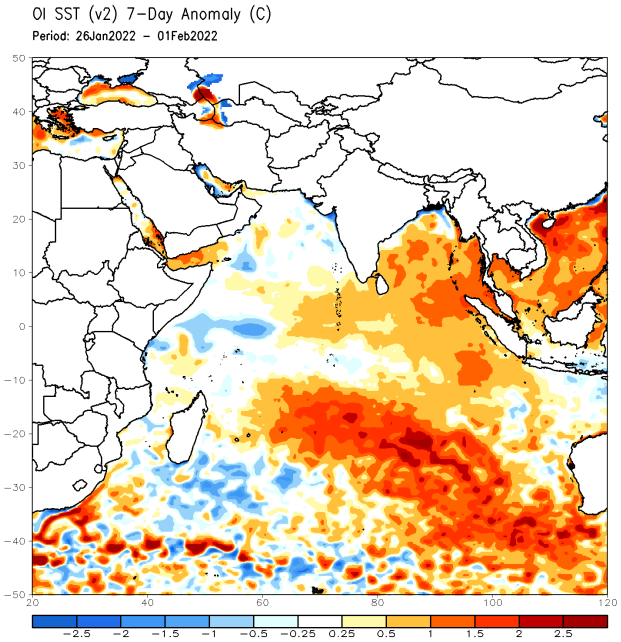


## Weekly Average SST Anomalies

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

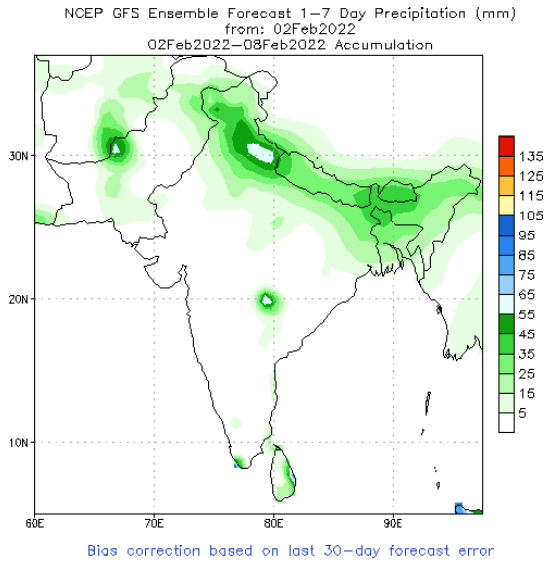


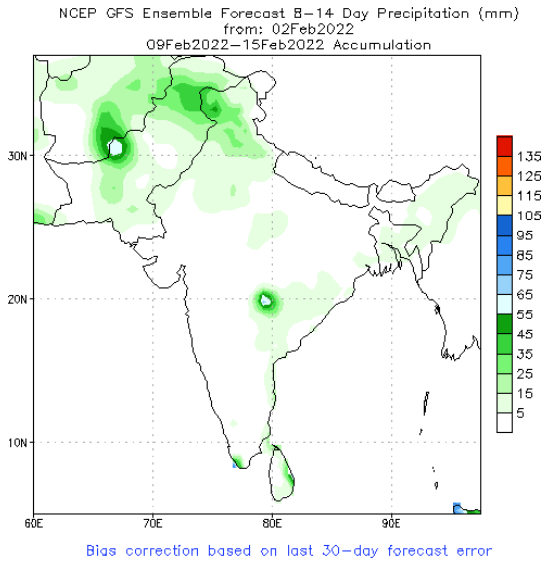

**Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC**



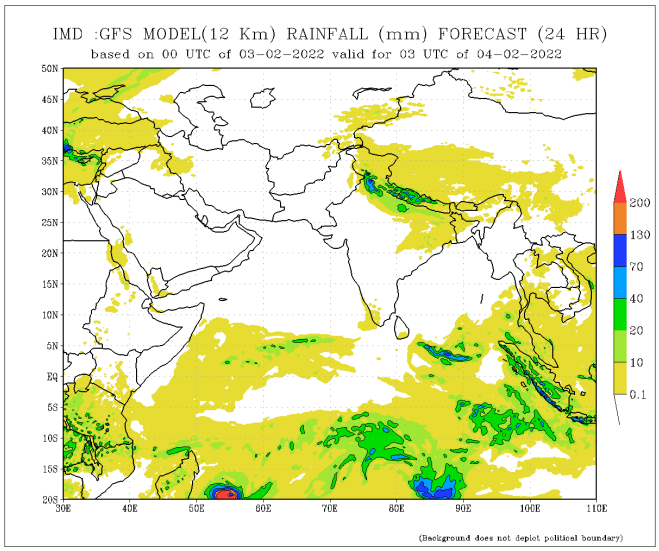
# PREDICTIONS

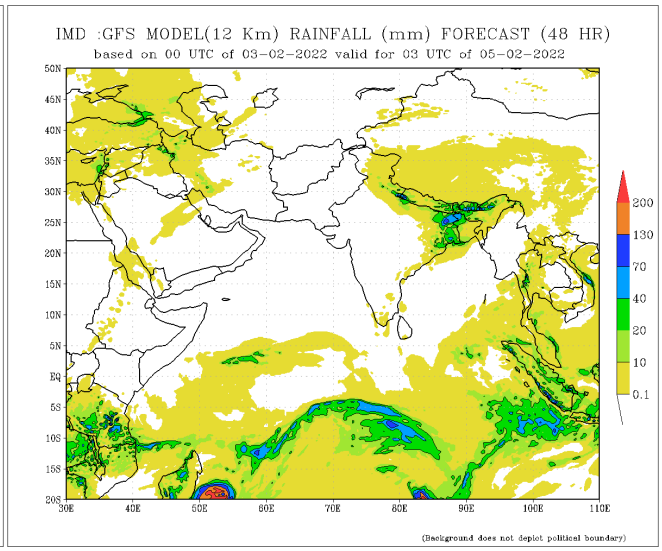
## NCEP GFS 1- 14 Day prediction

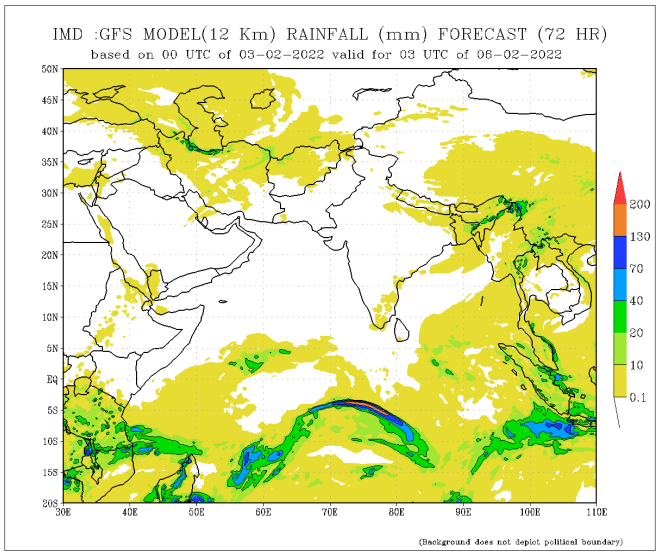


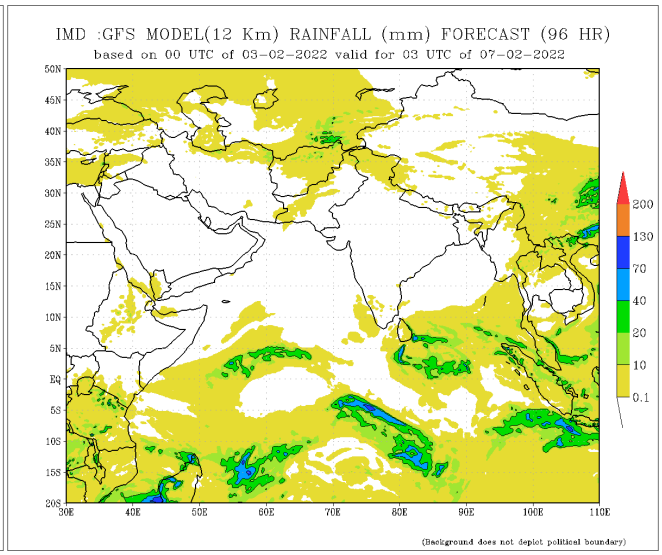



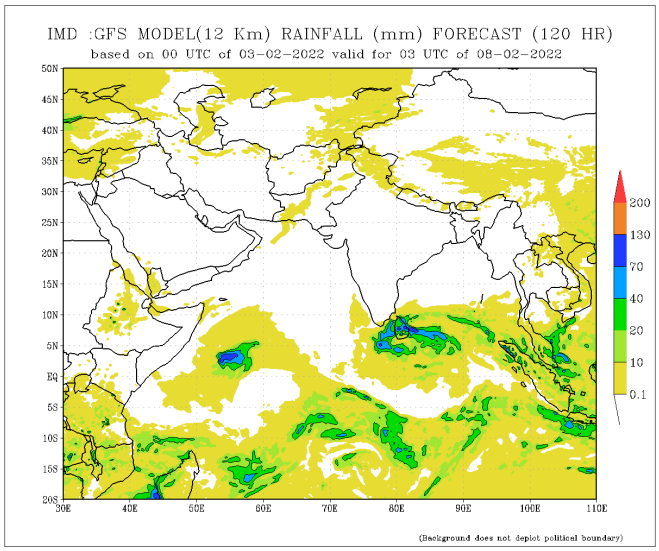

## IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

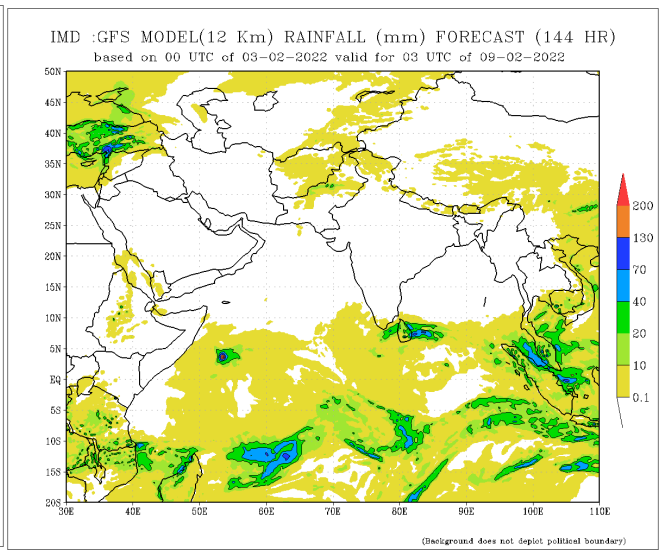


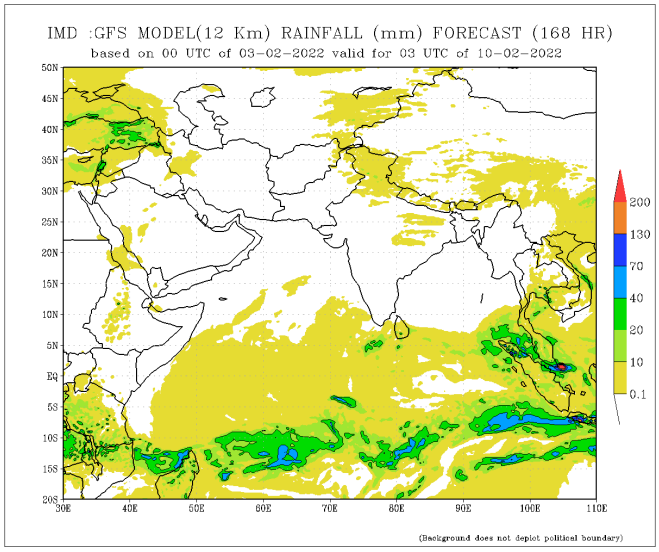



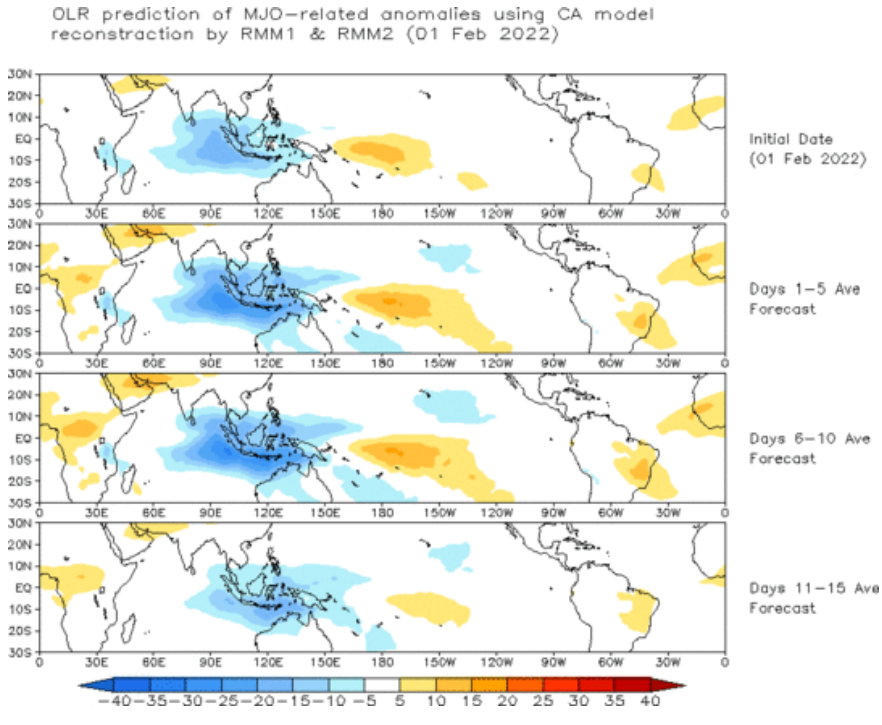


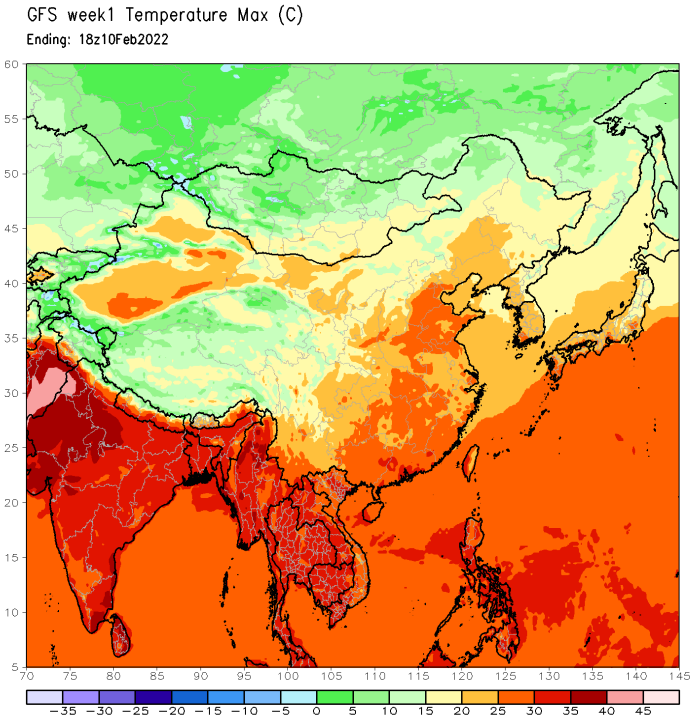

## Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

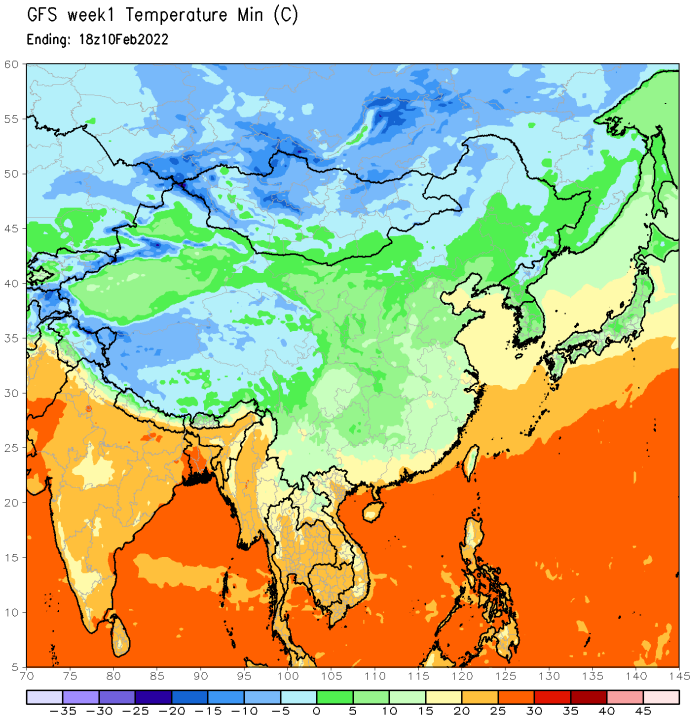
**The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO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



## Weekly Temperature Forecast

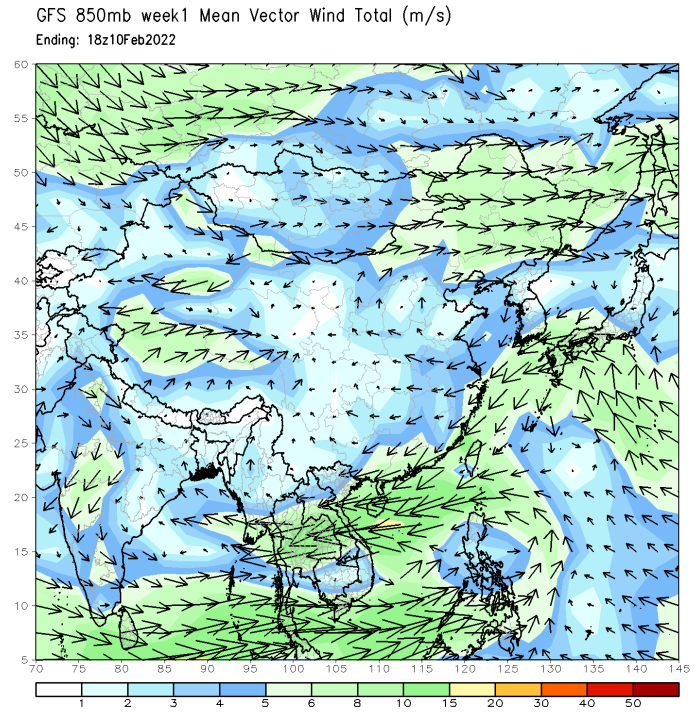
**Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)**

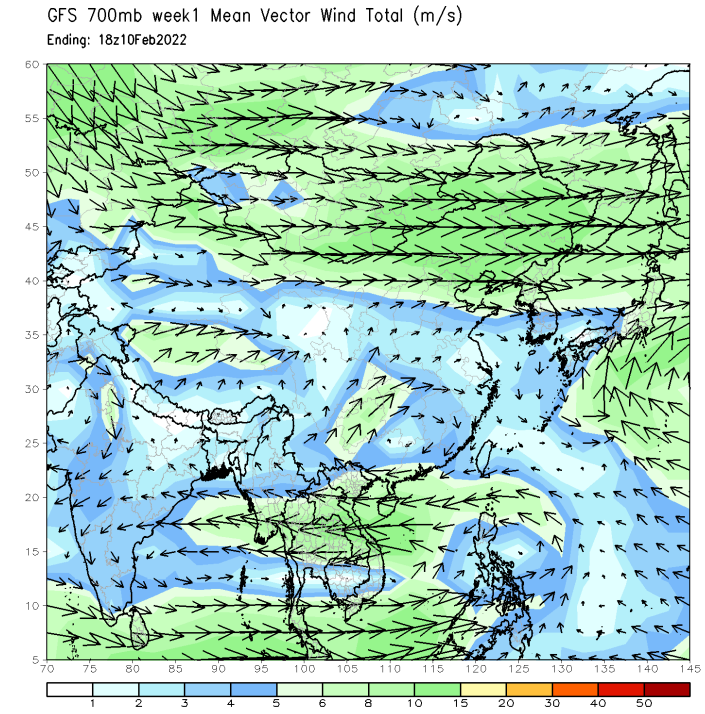



## Weekly Wind Forecast

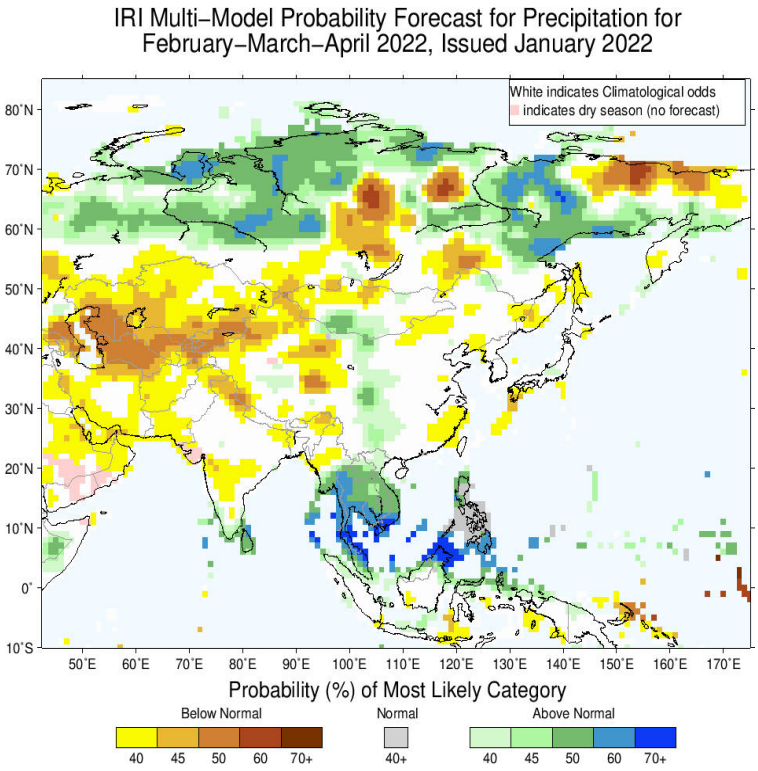
**Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)**



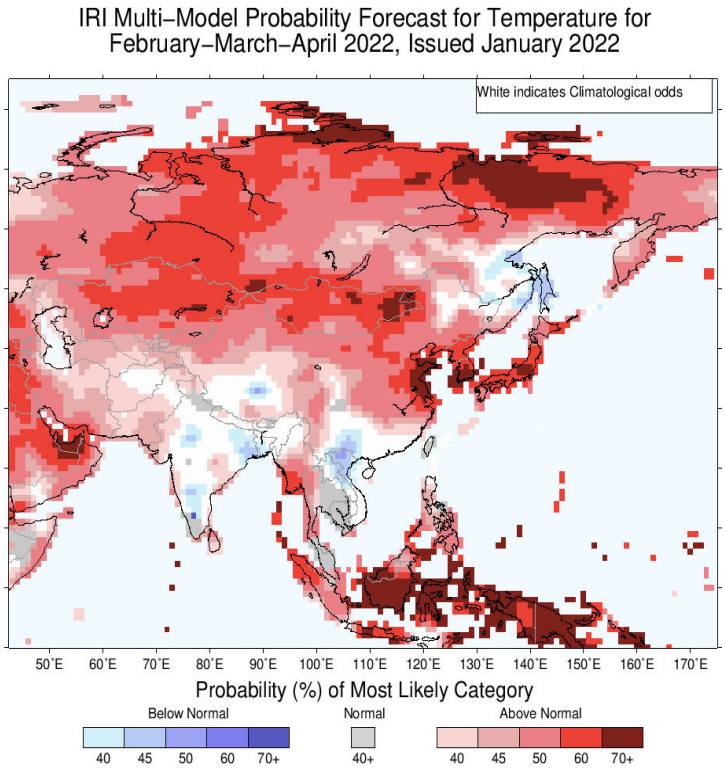



## Seasonal Rainfall and Temperature Forecast

**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%).**




**Precipitation Forecast**




**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**
**phone: (+94) 81 2376746**

**Follow us on**

**Subscribe to our monthly newsletters**


© 2021 Federation for Environment Climate and Technology