

Week of  
21 Jan - 28 Jan  
2022

## CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

### HIGHLIGHTS

#### Rainfall Prediction



- Fairly heavy rainfall is predicted for Eastern province from 22<sup>nd</sup> Jan – 25<sup>th</sup> Jan. Greater likelihood of wet tendency is predicted for Sri Lanka from Feb - Apr.

#### Monitored Rainfalls



- Heavy rainfall was experienced in the Northern province with max of 143.3 mm in Jaffna district on 17<sup>th</sup> Jan.

#### Monitored Wind



- From 11<sup>th</sup> Jan - 18<sup>th</sup> Jan, up to 45 km/h Northeasterlies were experienced across the island.

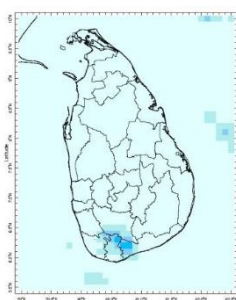
#### Monitored Sea Surface



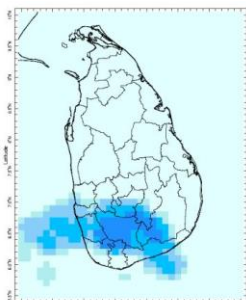
- Sea surface temperatures were 0.5°C above neutral in the southern and northern seas and neutral around the rest of the island.

### Monitoring Rainfall

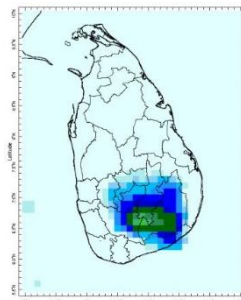
#### Daily Estimates for Rainfall from 11<sup>th</sup> January – 18<sup>th</sup> January 2022



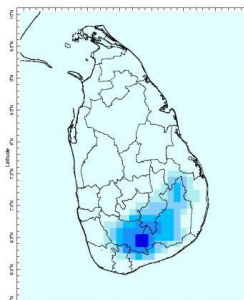
11 January



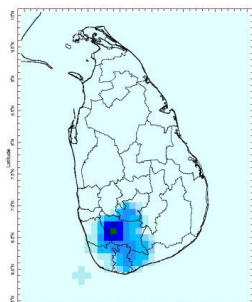
12 January



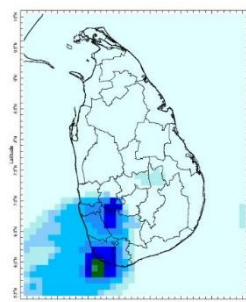
13 January



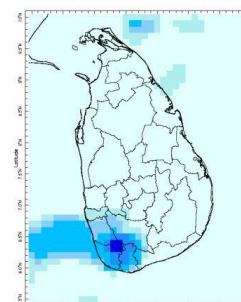
14 January



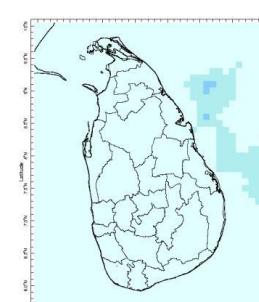
15 January



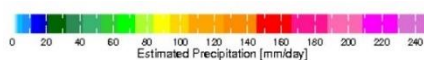
16 January



17 January



18 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](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: January 12, 2022***

Equatorial sea surface temperatures (SSTs) are below average across the tropical Pacific Ocean in mid-January. A large majority of the model forecasts indicates a continuation of La Niña until Northern Hemisphere spring and then transitioning to ENSO-neutral.

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

Sea surface temperatures were 0.5°C above neutral in the southern and northern seas and neutral around the rest of the island.

## Predictions

### Rainfall

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

**From 19<sup>th</sup> January – 25<sup>th</sup> January:**

Total rainfall by Provinces:

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

**From 26<sup>th</sup> January – 1<sup>st</sup> February:**

Total rainfall by Provinces:

| Rainfall | Provinces                                      |
|----------|--|
| 85 mm    | Eastern  |
| 35 mm    | North Central, Northern, Uva                   |
| 15 mm    | Central  |
| 5 mm     | North Western, Sabaragamuwa, Southern, Western |

### MJO based OLR predictions

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

MJO shall be active during 22<sup>nd</sup> January – 28<sup>th</sup> January giving slightly suppressed rainfall in the South during 22<sup>nd</sup> January – 23<sup>rd</sup> January and to the entire island from 24<sup>th</sup> January to 28<sup>th</sup> January. MJO shall be neutral from 9<sup>th</sup> January – 2<sup>nd</sup> February to the entire island.

# Interpretation

## Monitoring

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

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

**Temperatures:** The temperature anomalies were 1°C – 3°C above neutral in some parts of Sabaragamuwa province and neutral for the entire island last week, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (22<sup>nd</sup> January – 25<sup>th</sup> January) 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 22<sup>nd</sup> January – 29<sup>th</sup> January.

### Teleconnections:

La Nina - The SST forecast indicates that La Niña is favored to continue through the Northern Hemisphere spring.

MJO shall be active during 22<sup>nd</sup> January – 28<sup>th</sup> January giving slightly suppressed rainfall in the South during 22<sup>nd</sup> January – 23<sup>rd</sup> January and to the entire island from 24<sup>th</sup> January to 28<sup>th</sup> January. MJO shall be neutral from 9<sup>th</sup> January – 2<sup>nd</sup> February to the entire island.

### 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, <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

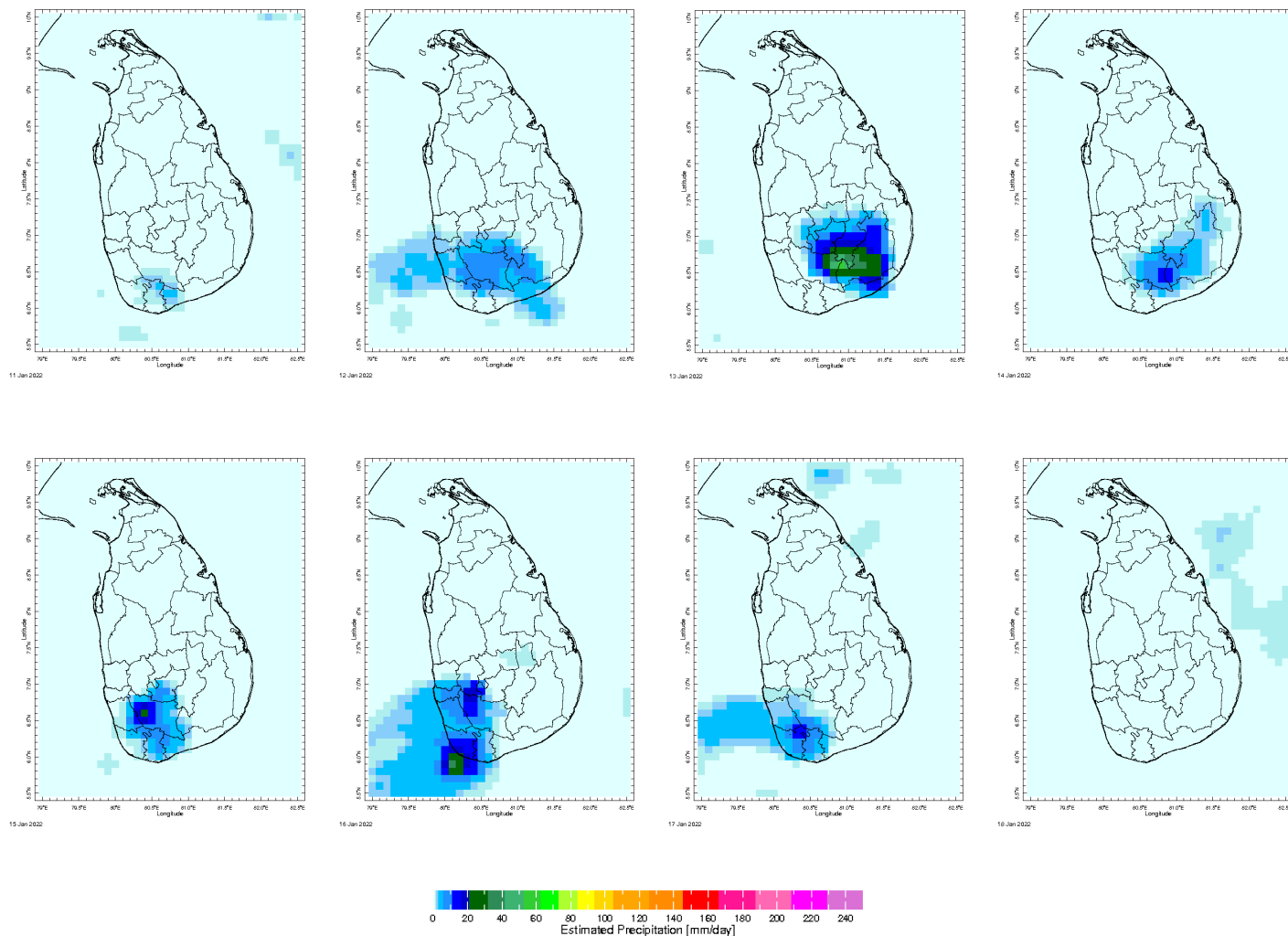
- NCEP GFS Ensemble 1-14 day Rainfall Predictions
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### MONITORING

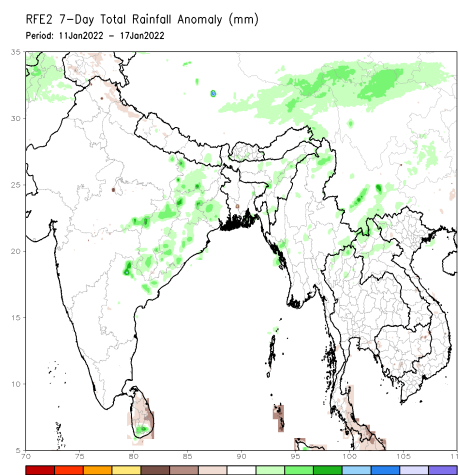
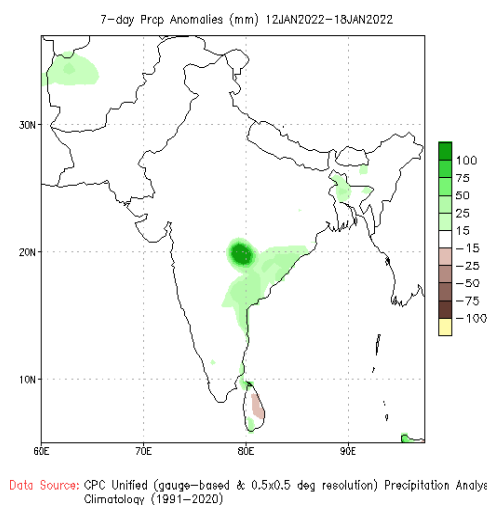
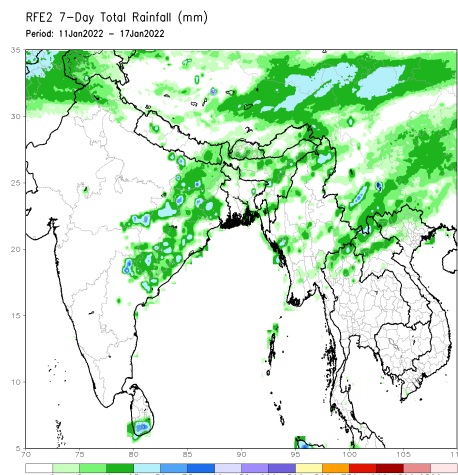
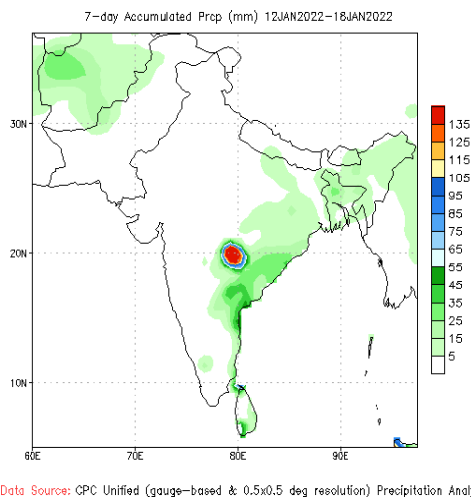
#### Daily Rainfall Monitoring

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



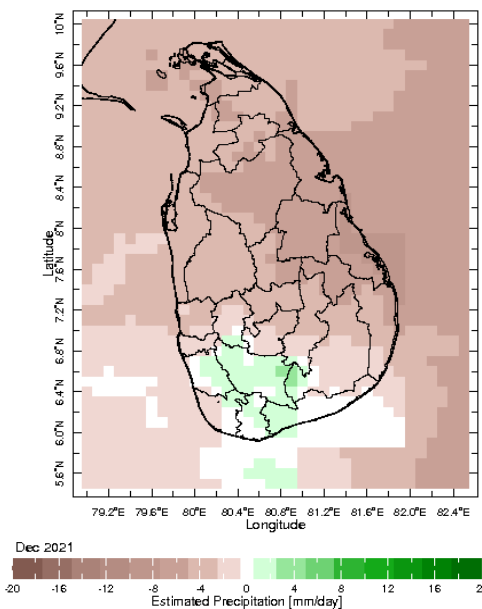
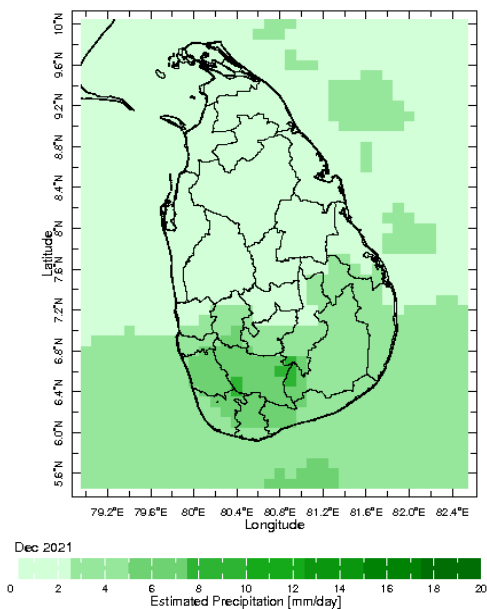
## Weekly Rainfall Monitoring

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.



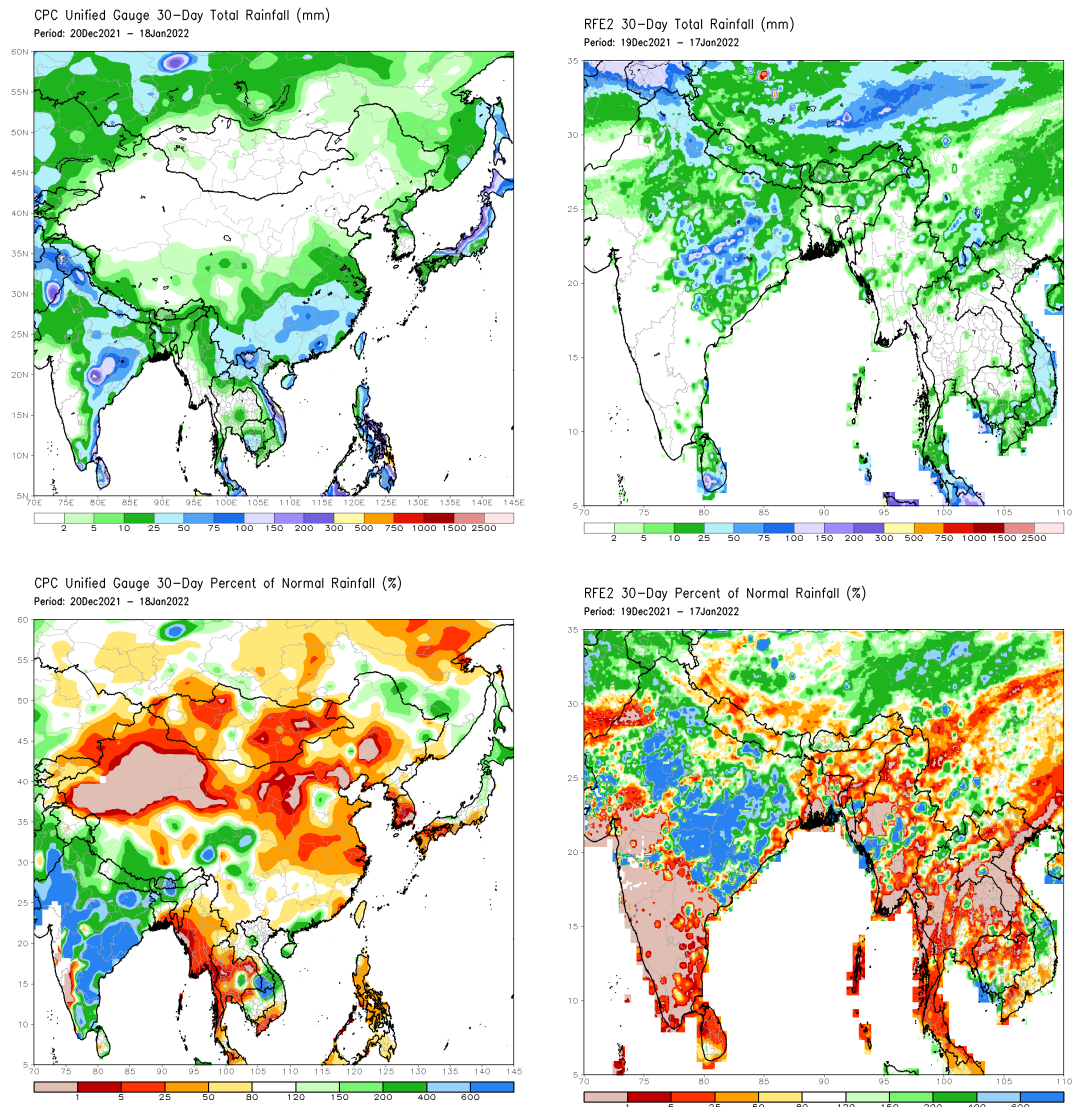
## Monthly Rainfall Monitoring

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

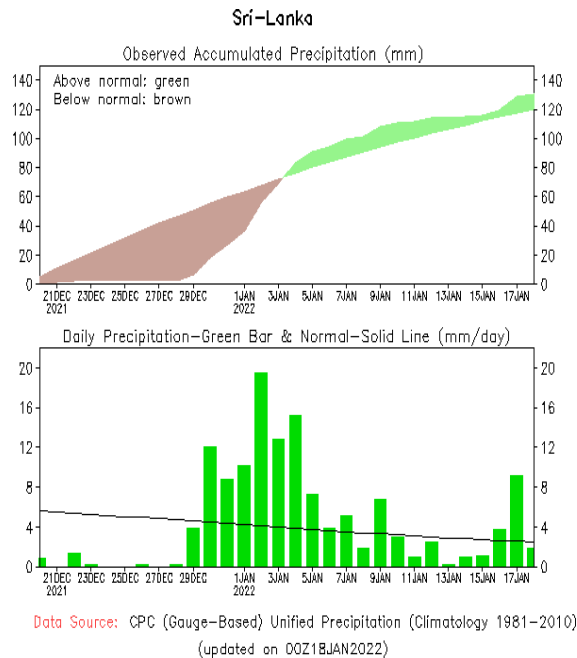




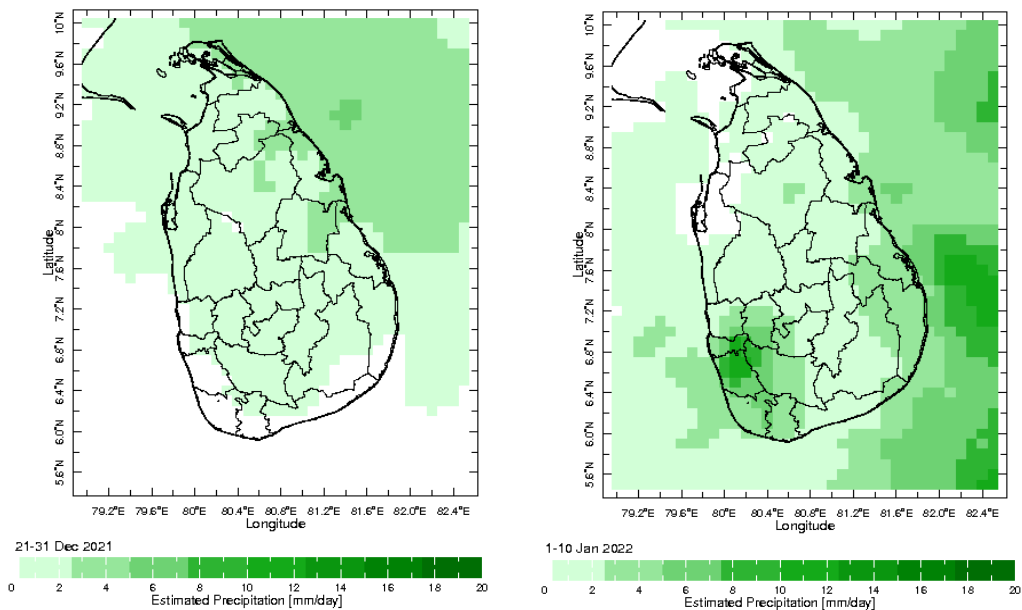
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



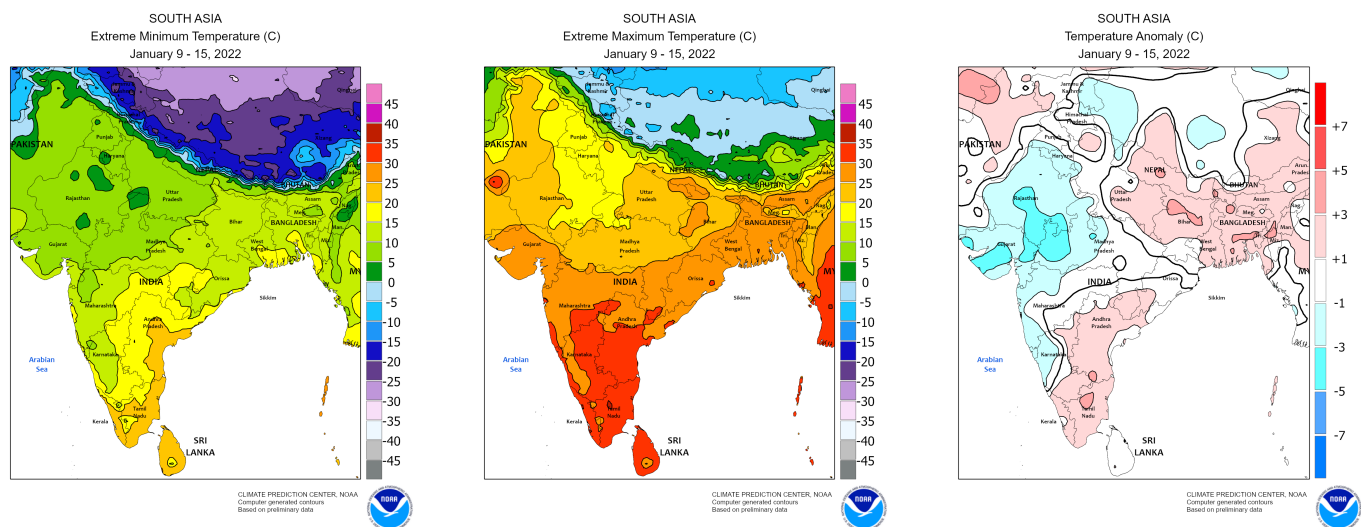
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



## Dekadal (10 Day) Satellite Derived Rainfall Estimates



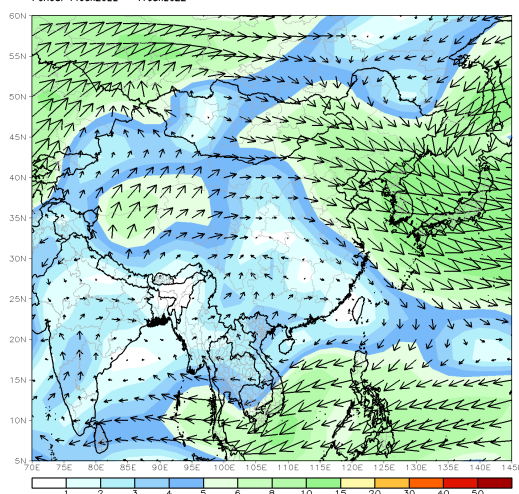
## Weekly Temperature Monitoring



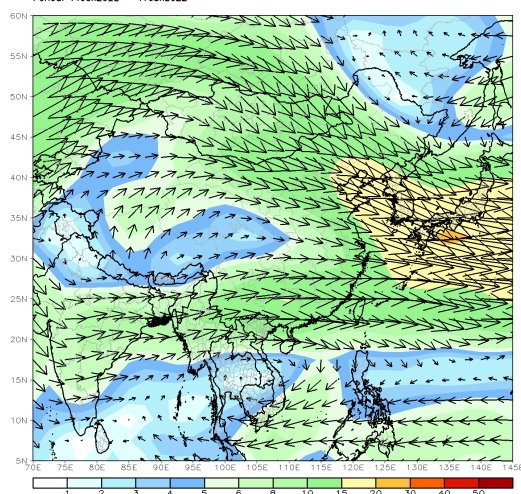
## Weekly Wind Monitoring

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.

CDAS 850mb 7-Day Mean Vector Wind Total (m/s)  
Period: 11Jan2022 - 17Jan2022

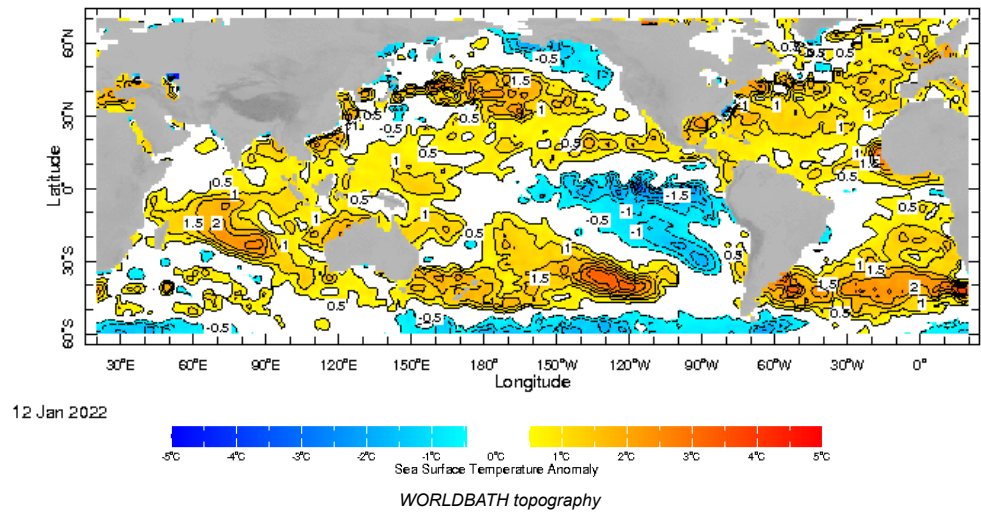


CDAS 700mb 7-Day Mean Vector Wind Total (m/s)  
Period: 11Jan2022 - 17Jan2022

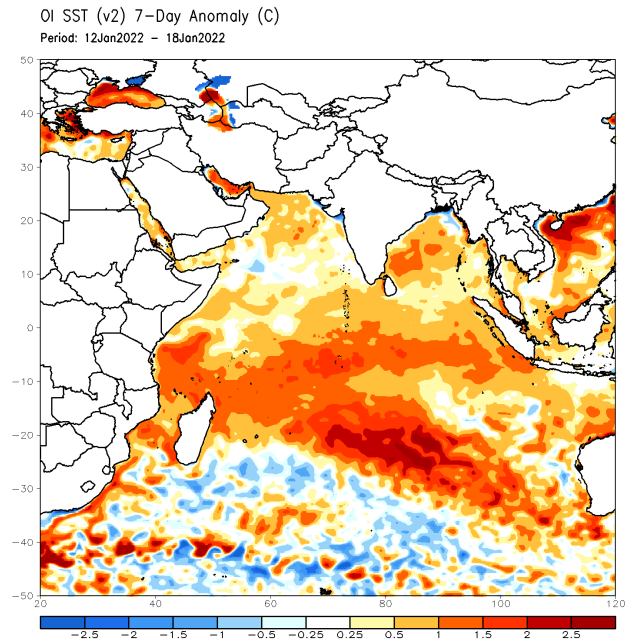


**Weekly Average SST Anomalies**

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

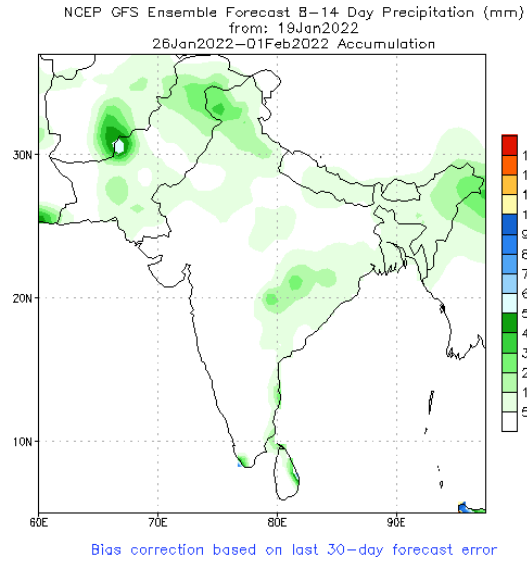
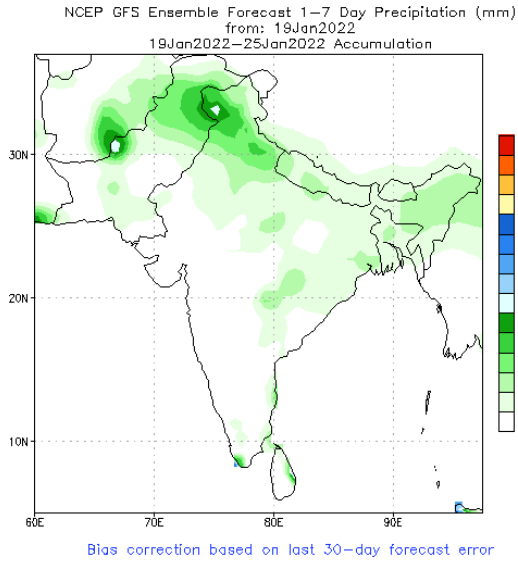


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

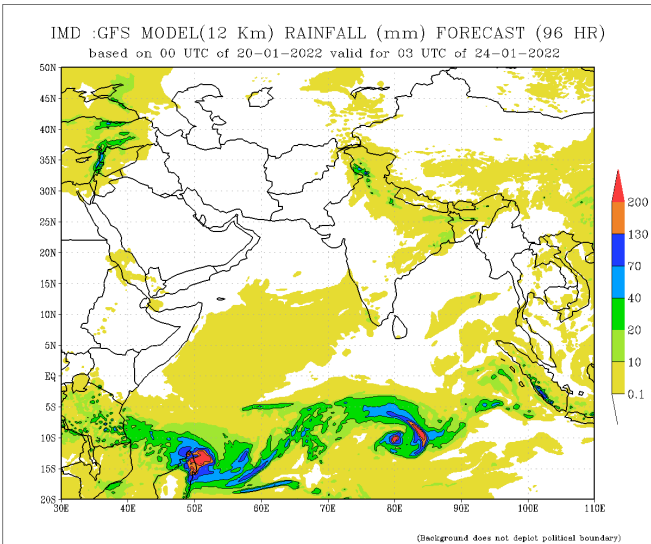
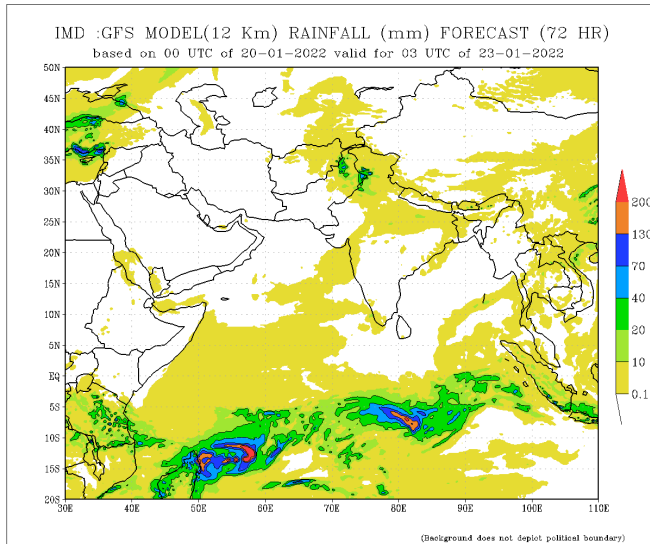
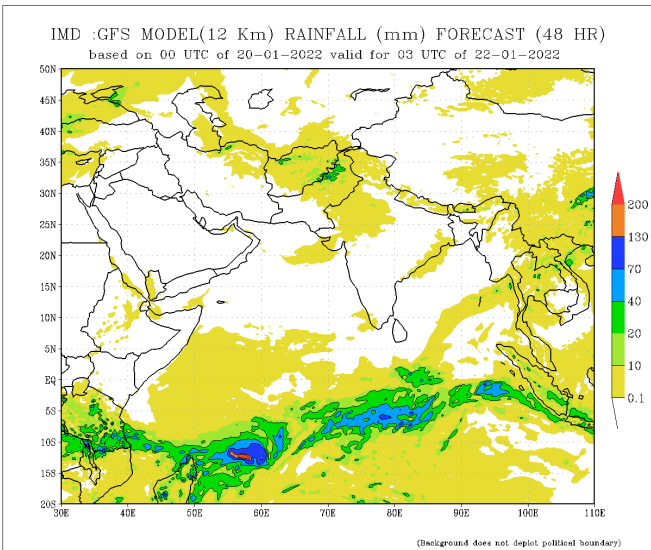
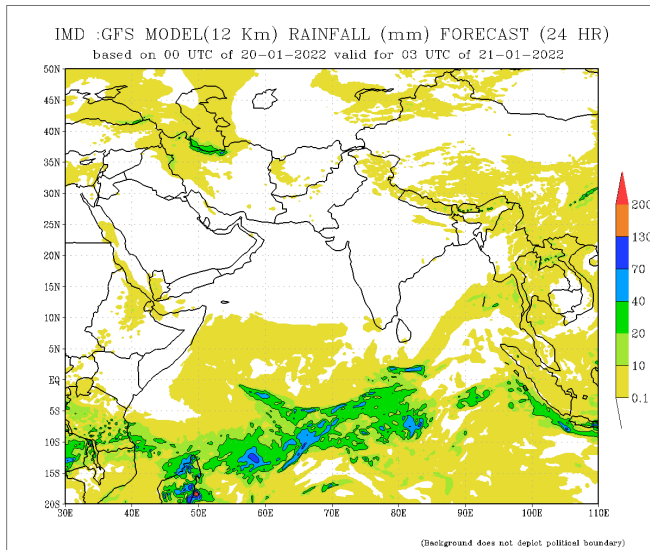


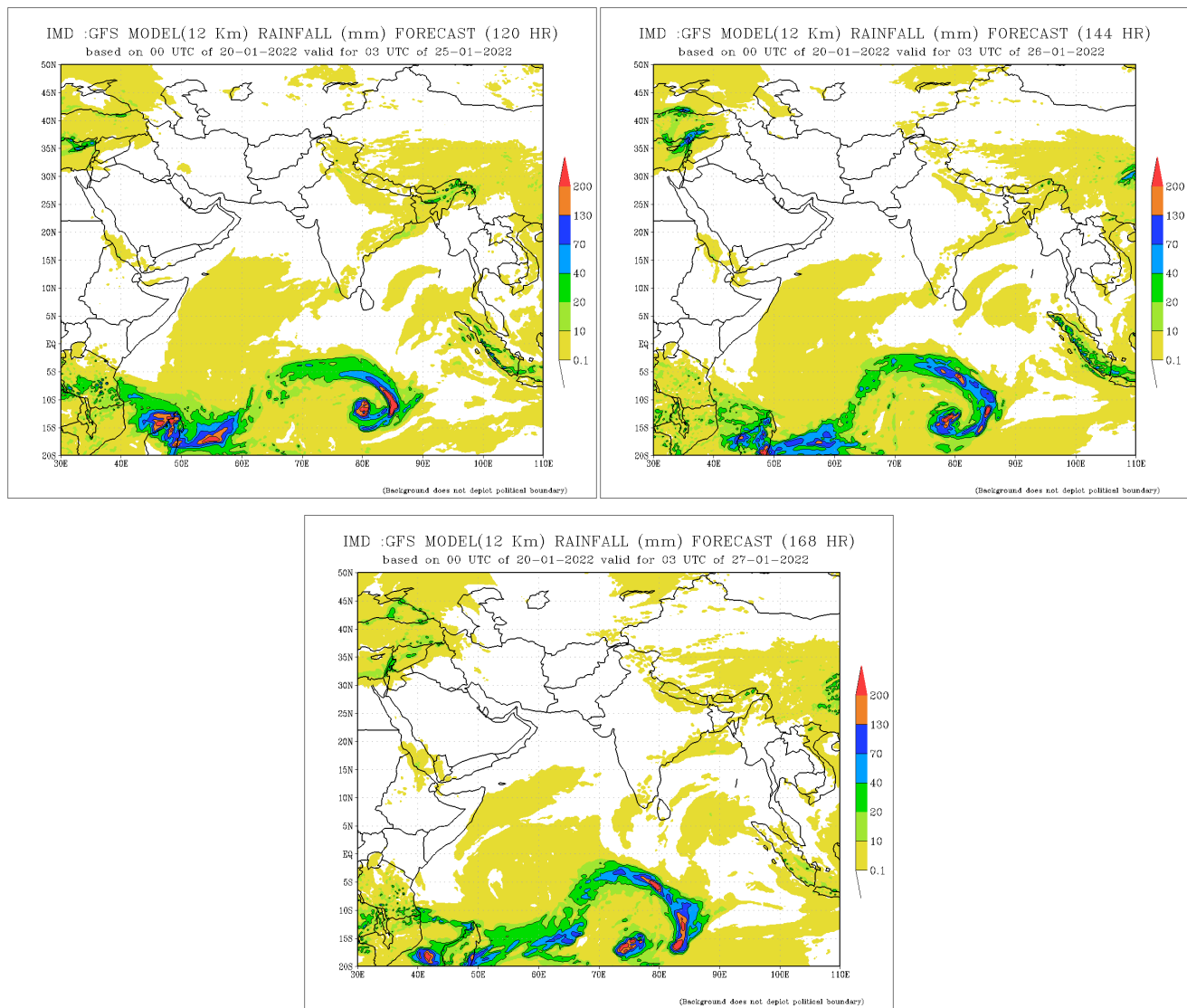


## NCEP GFS 1- 14 Day prediction



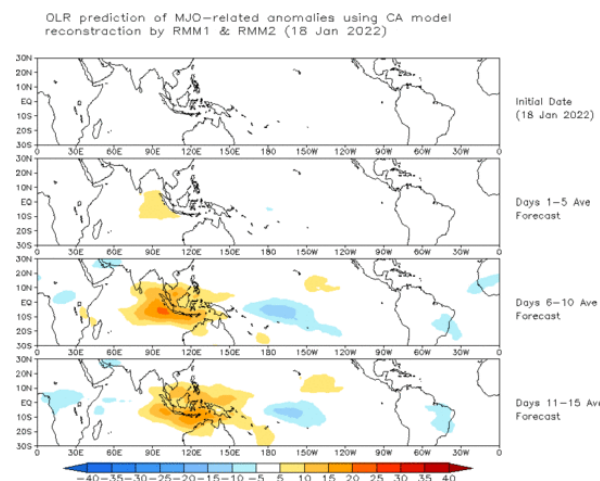
## IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India





## 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.

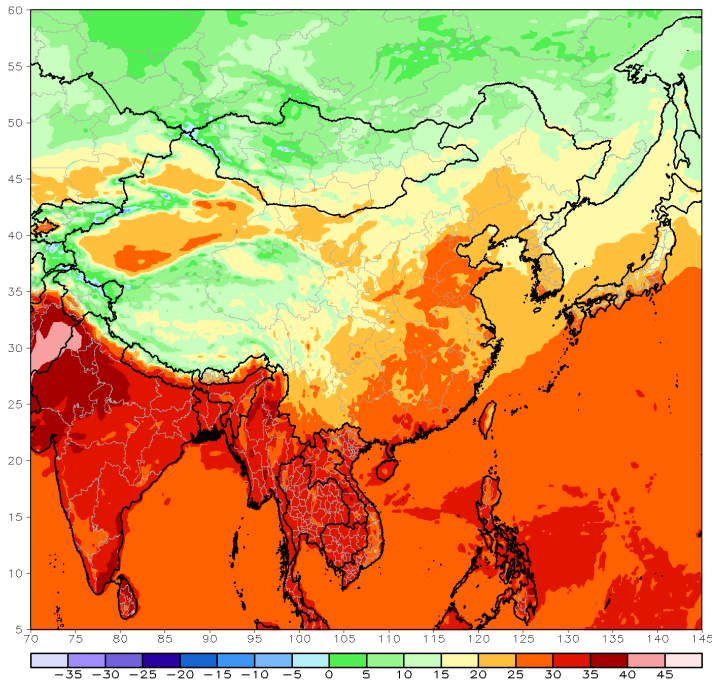


## Weekly Temperature Forecast

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

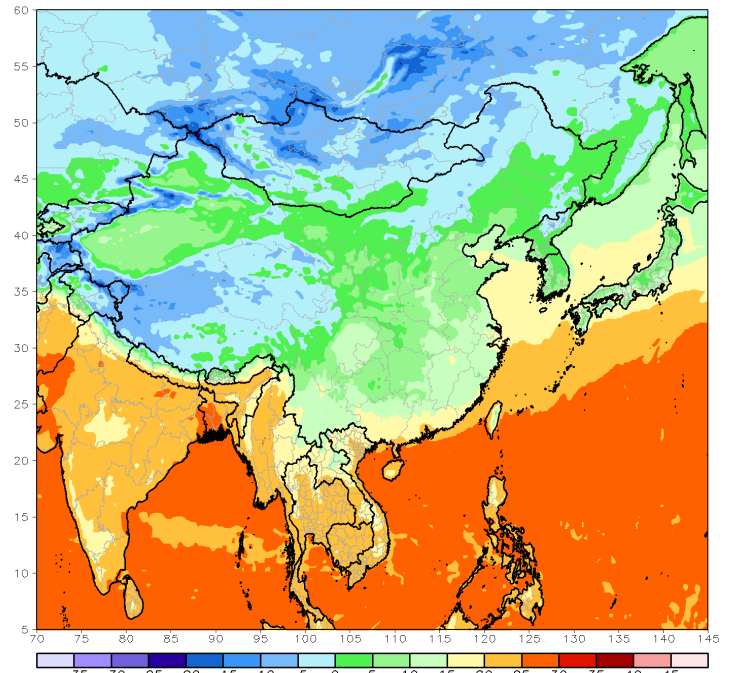
GFS week1 Temperature Max (C)

Ending: 18z26Jan2022



GFS week1 Temperature Min (C)

Ending: 18z26Jan2022

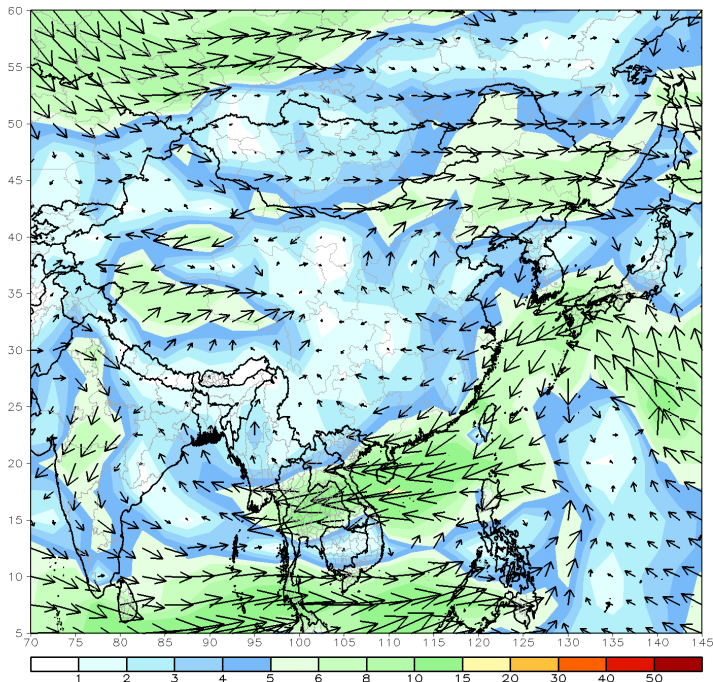


## Weekly Wind Forecast

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

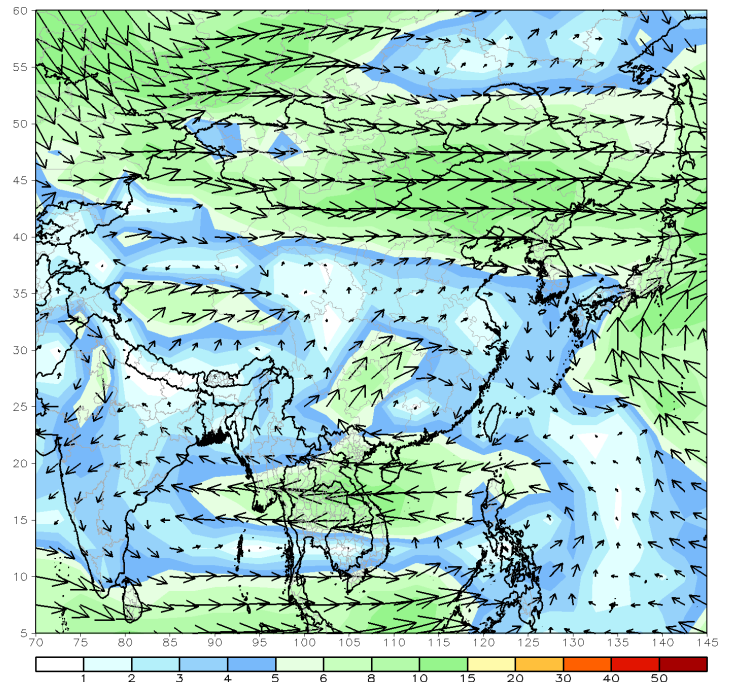
GFS 850mb week1 Mean Vector Wind Total (m/s)

Ending: 18z26Jan2022



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

Ending: 18z26Jan2022

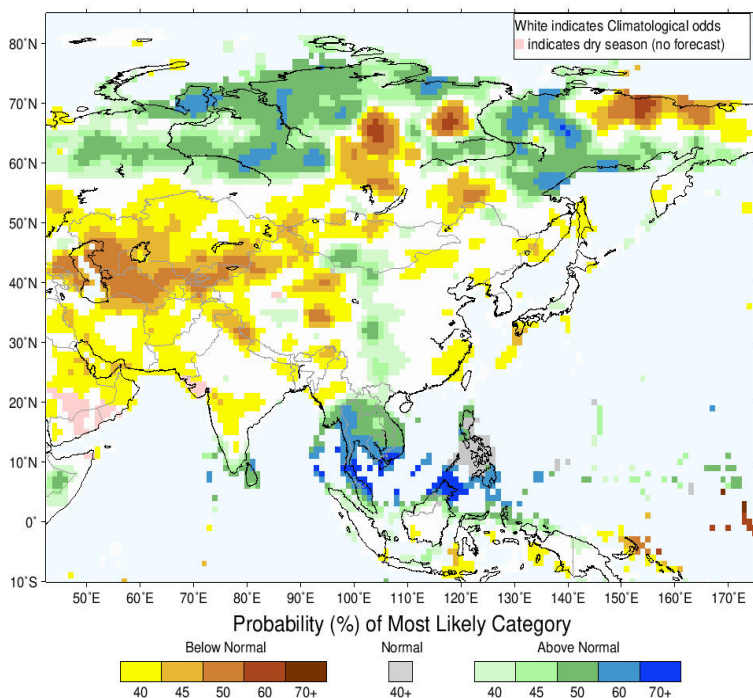




## Seasonal Rainfall and Temperature Forecast

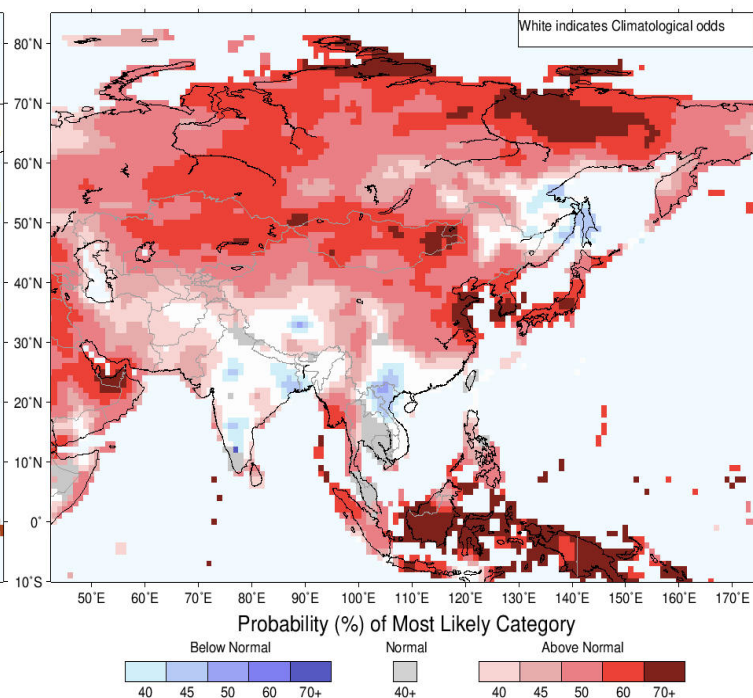
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant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



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for February–March–April 2022, Issued January 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)  
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