

# HIGHLIGHTS

Rainfall Prediction



• During the next week (5<sup>th</sup> - 11<sup>th</sup> October) moderate rainfall is predicted for the Western, Sabaragamuwa and Central provinces, and less rainfall is expected for the rest of the country.

Monitored Rainfalls



• During the last week, the average daily rainfall over Sri Lanka was 3.5 mm and hydro catchment areas received 22.1 mm on average.

Monitored Wind



• From 26<sup>th</sup> Sep-2<sup>nd</sup> Oct, up to 15m/s of north-westerly winds were experienced at 850 mb level over the island. North-westerly winds are expected next week.

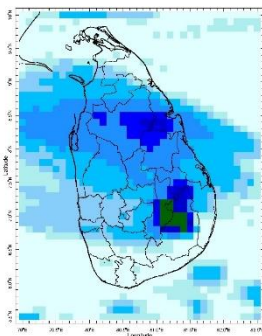
Monitored Sea & Land Temp



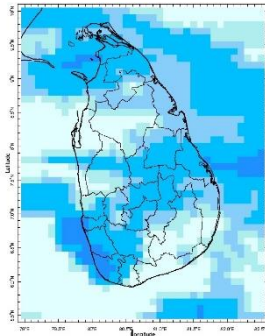
• Sea surface temperature around Sri Lanka was above 0.5 °C to the north and west of the country. Land surface temperature remained near normal.

## Monitoring Rainfall

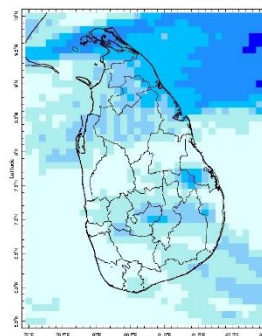
### Daily Estimates for Rainfall from 27<sup>th</sup> September –4<sup>th</sup> October 2022



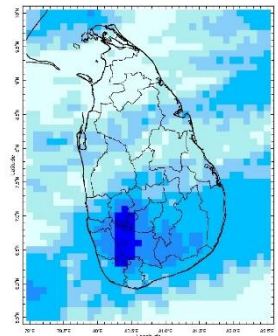
27 September



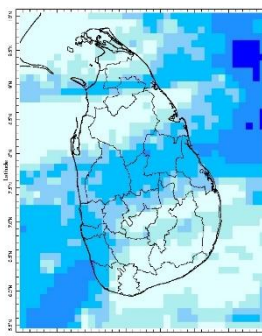
28 September



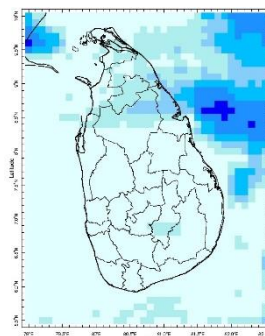
29 September



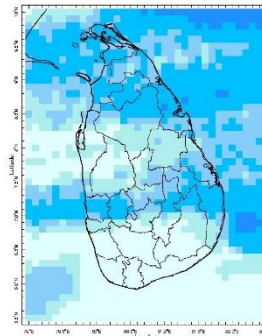
30 September



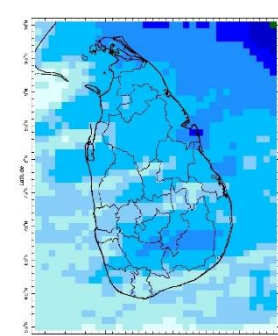
1 October



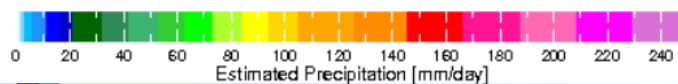
2 October



3 October



4 October



Federation for  
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## Ocean State *(Text Courtesy IRI)*

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### ***Pacific sea state: October 3, 2022***

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean early - October. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate La Niña is favored to continue through Northern Hemisphere winter 2022-23, with a 91% chance in September-November, decreasing to a 54% chance in January-March 2023.

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

Sea surface temperature around Sri Lanka was above 0.5°C to the North and West of the country. Across the Indian Ocean, a classical negative Indian Ocean Dipole prevails as is typical during a La Niña.

## Predictions

### Rainfall

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

**From 5<sup>th</sup> October – 11<sup>th</sup> October:**

Total rainfall by Provinces:

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

**From 12<sup>th</sup> October – 18<sup>th</sup> October:**

Total rainfall by Provinces:

Rainfall	Provinces
65 mm	Sabaragamuwa, Western
55 mm	Central, Southern, Uva, North Western
45 mm	Northern, North Central, Eastern

### MJO based OLR predictions

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

MJO shall near neutral during 5<sup>th</sup>– 9<sup>th</sup> October; slightly suppress rainfall during 10<sup>th</sup> – 14<sup>th</sup> October and significantly suppress the rainfall during 15<sup>th</sup> – 19<sup>th</sup> October for Sri Lanka.

## Interpretation

### Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (27<sup>th</sup> Sep - 4<sup>th</sup> Oct) = 3.5 mm  
Rmax: 61.1 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	1.3 mm
Eastern	1.0 mm
Western	8.0 mm
Southern Plains	0.5 mm

The Hydro Catchment Areas recorded 22.1 mm of average rainfall for the last week

Rmax: 152.8 mm & Rmin: 0.0 mm.

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

**Temperatures:** The temperature anomalies were above normal for the southern, Sabaragamuwa and western provinces, driven by the warm SST's.

## Predictions

**Rainfall:** During the next week (5<sup>th</sup> October - 11<sup>th</sup> October) moderate rainfall is predicted for the Western, Sabaragamuwa and Central provinces, and less rainfall is expected for the rest of the country.

**Temperatures:** The temperature will remain above normal for the Uva and Eastern provinces during 6<sup>st</sup> October – 12<sup>th</sup> October.

**Teleconnections:** La Niña is favored to continue through Northern Hemisphere winter 2022-23, with a 91% chance in September-November, decreasing to a 54% chance in January-March 2023.

MJO shall near neutral during 5<sup>th</sup>– 9<sup>th</sup> October; slightly suppress rainfall during 10<sup>th</sup> – 14<sup>th</sup> October and significantly suppress the rainfall during 15<sup>th</sup> – 19<sup>th</sup> October for Sri Lanka.

**Seasonal Precipitation:** The precipitation forecast for the October-November-December 2022 season shows a higher tendency for below-normal precipitation in the 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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### 2. Predictions

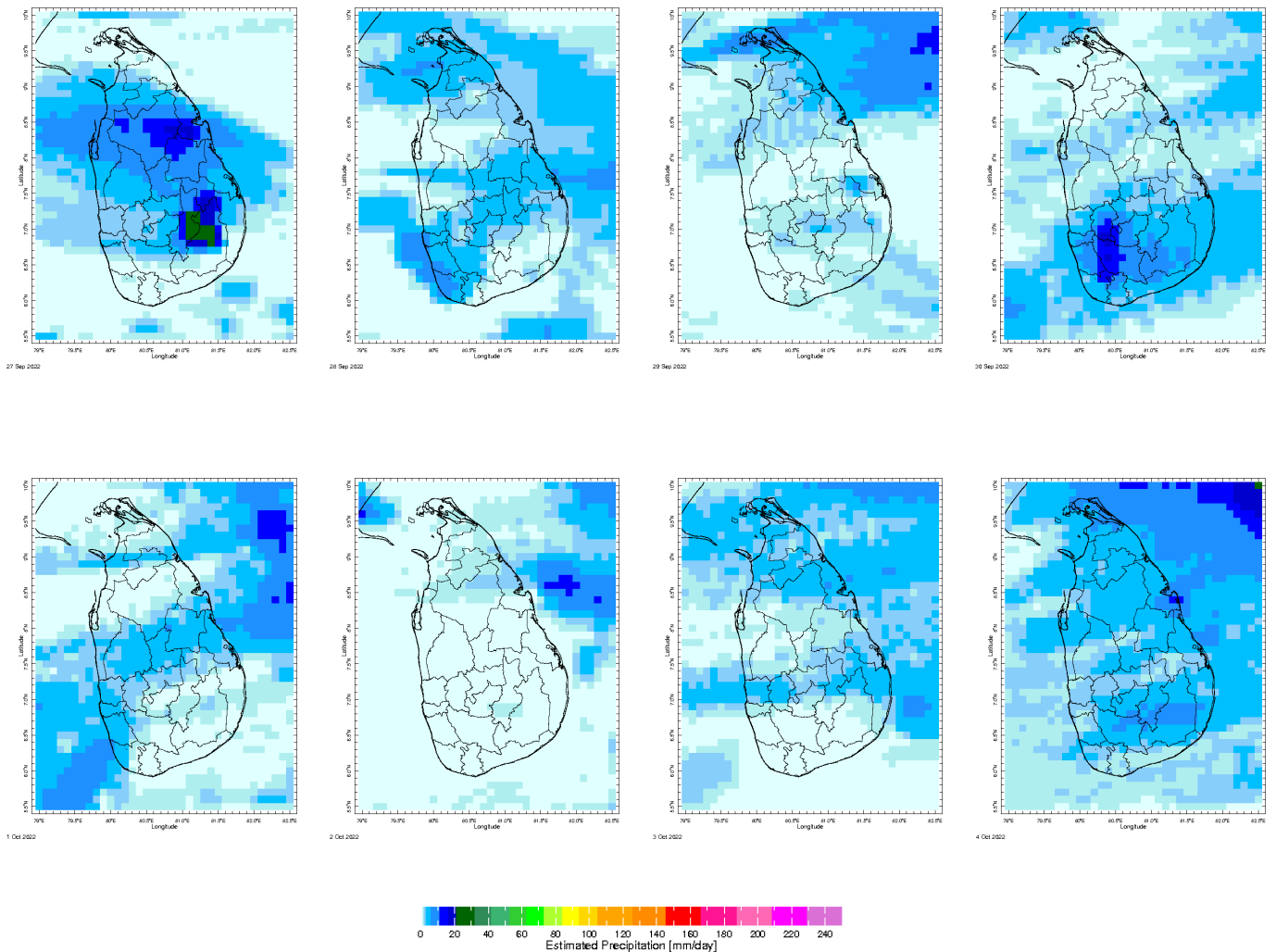
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## MONITORING

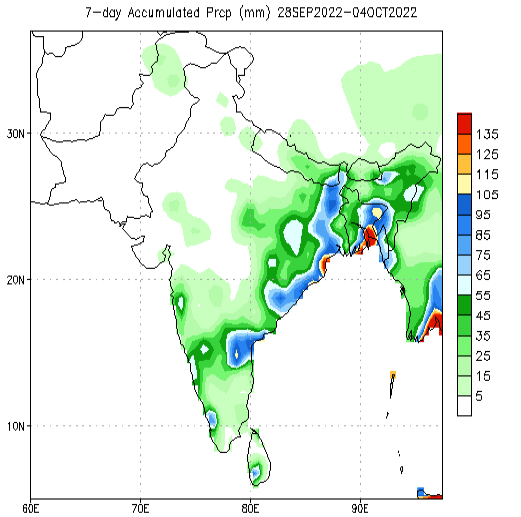
### Daily Rainfall Monitoring

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

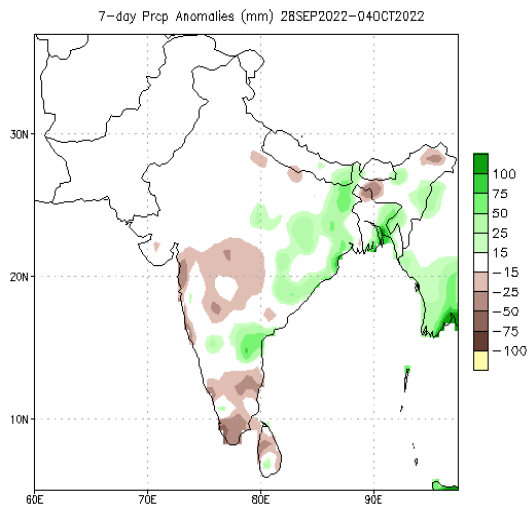
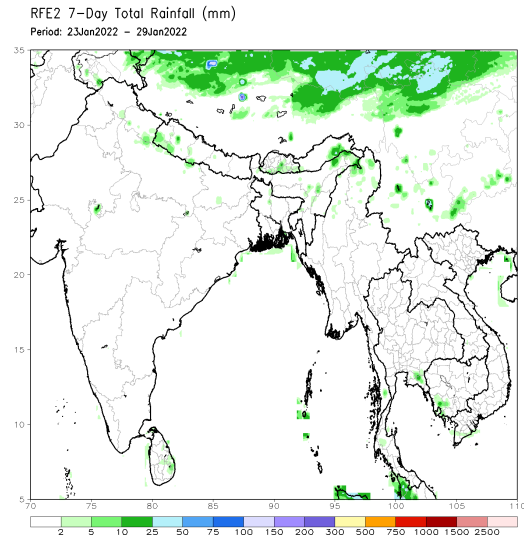


## Weekly Rainfall Monitoring

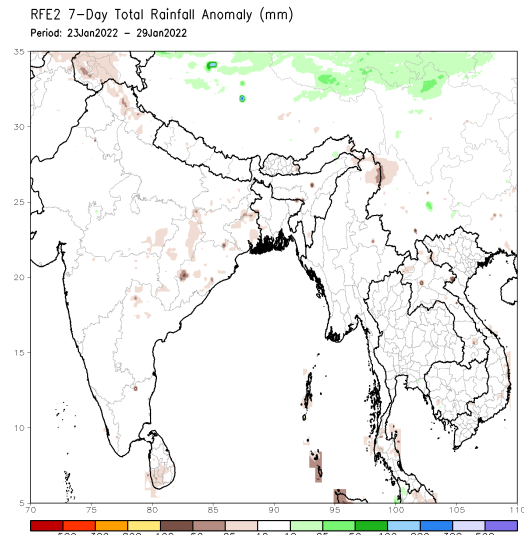
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.



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

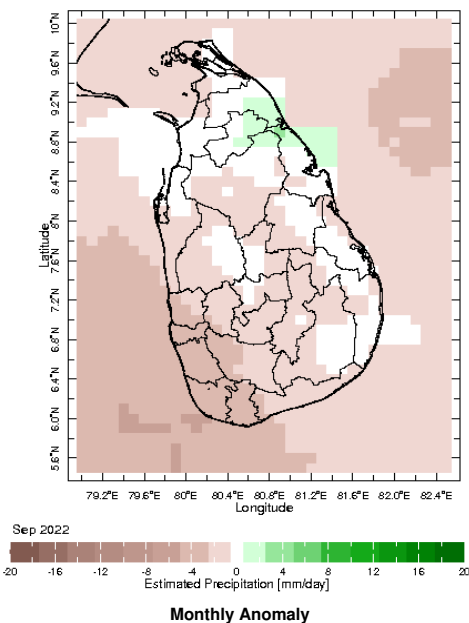
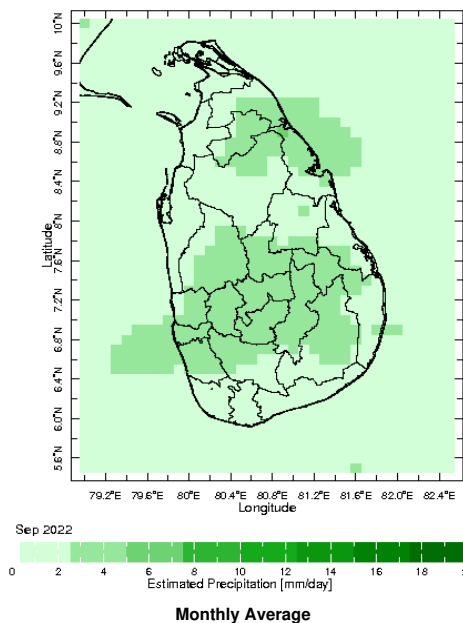


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

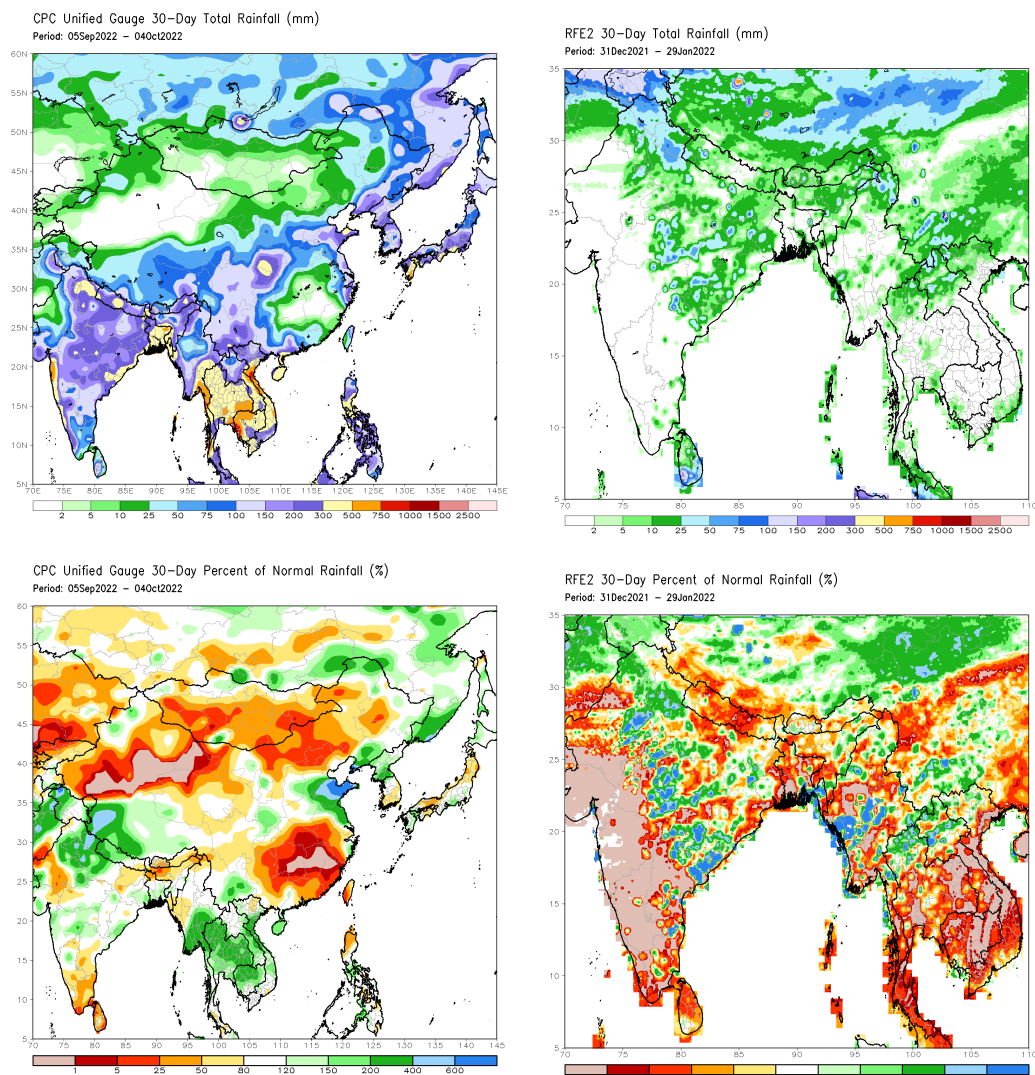


## Monthly Rainfall Monitoring

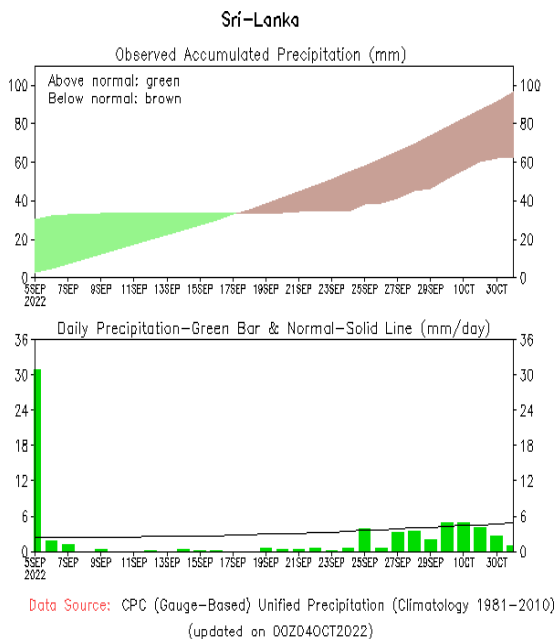
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



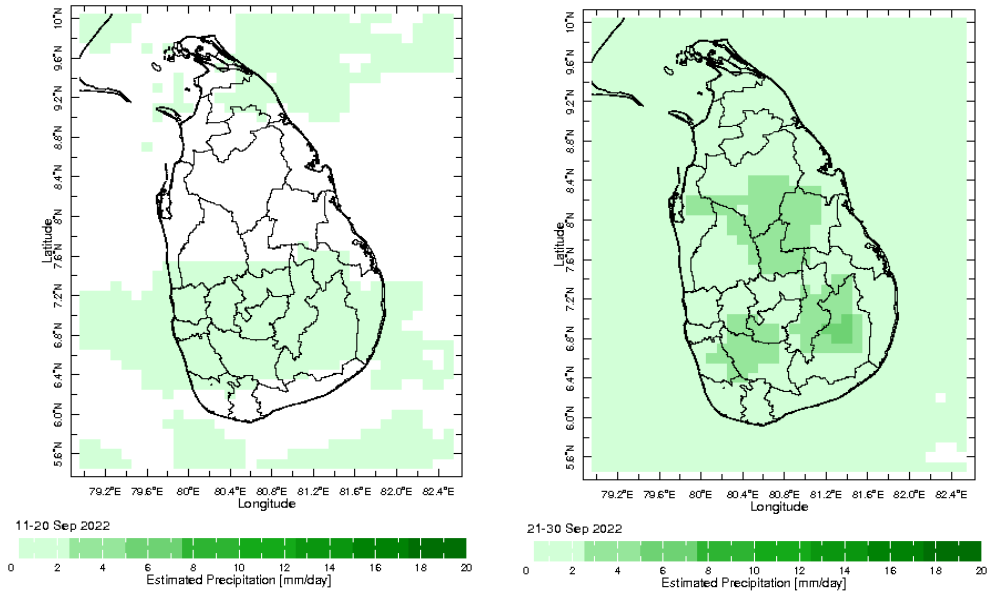
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



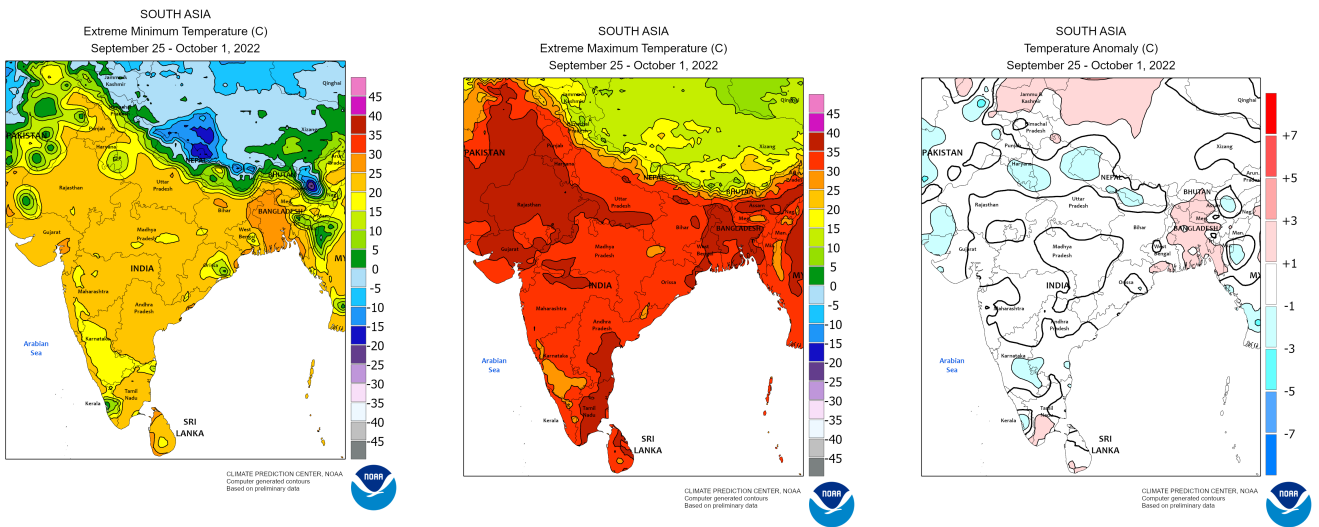
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



## Dekadal (10 Day) Satellite Derived Rainfall Estimates

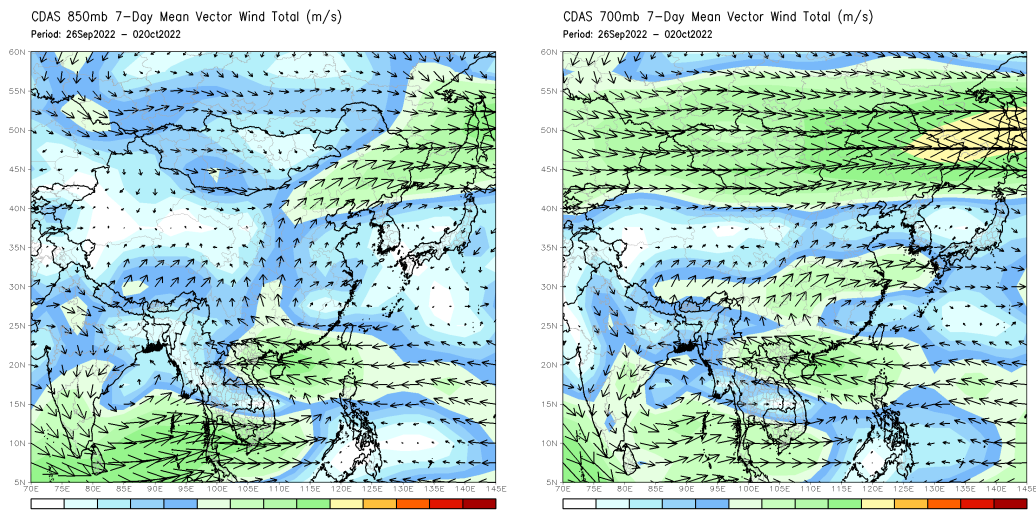


## Weekly Temperature Monitoring



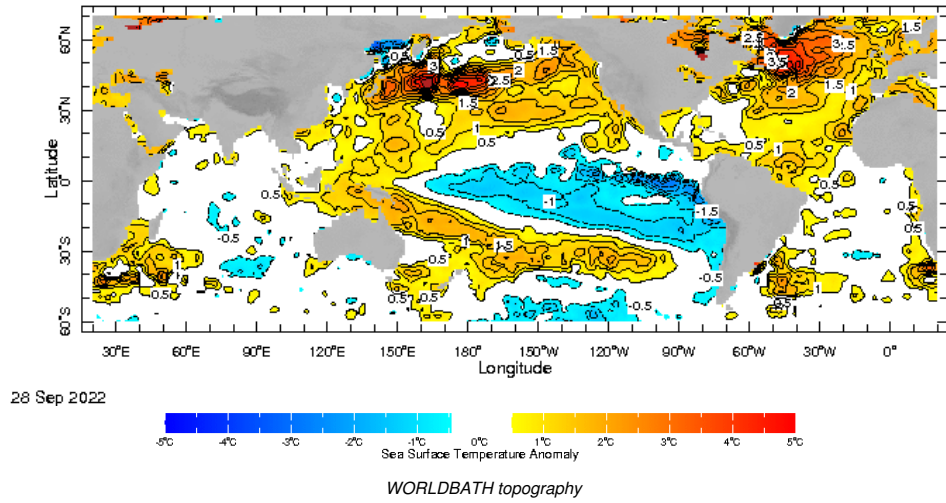
## Weekly Wind Monitoring

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.

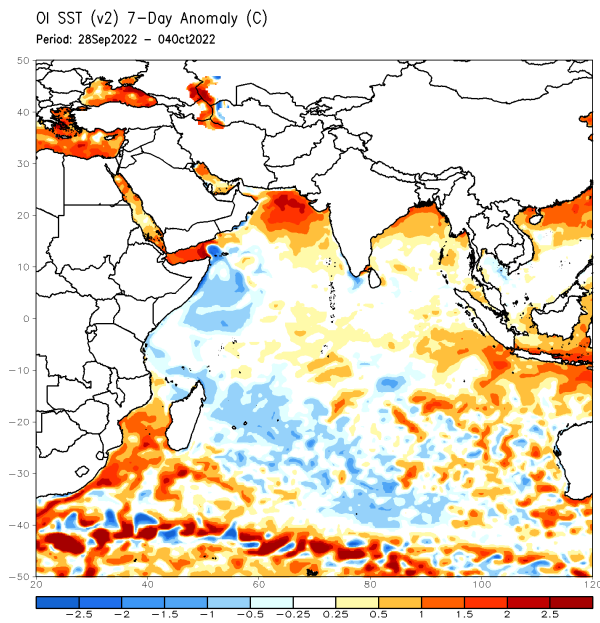


## Weekly Average SST Anomalies

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

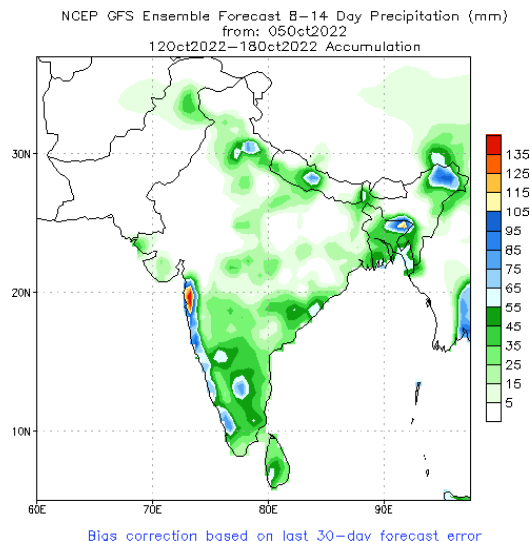
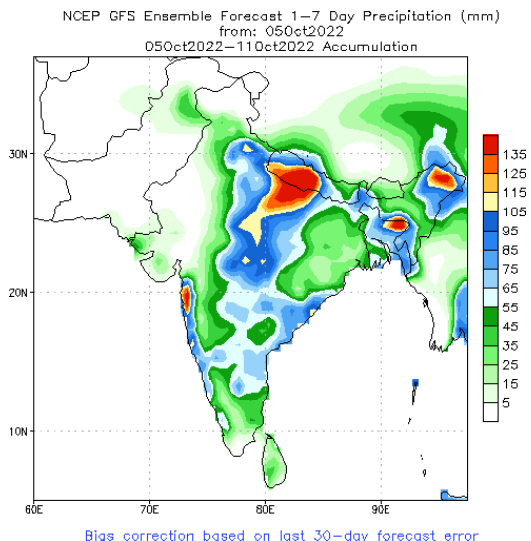


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

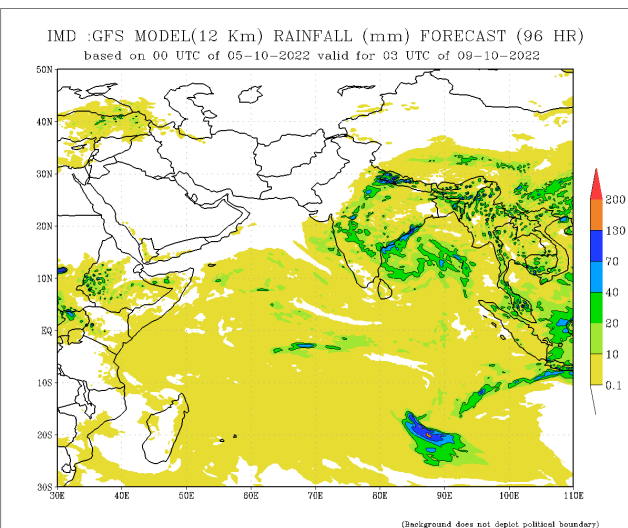
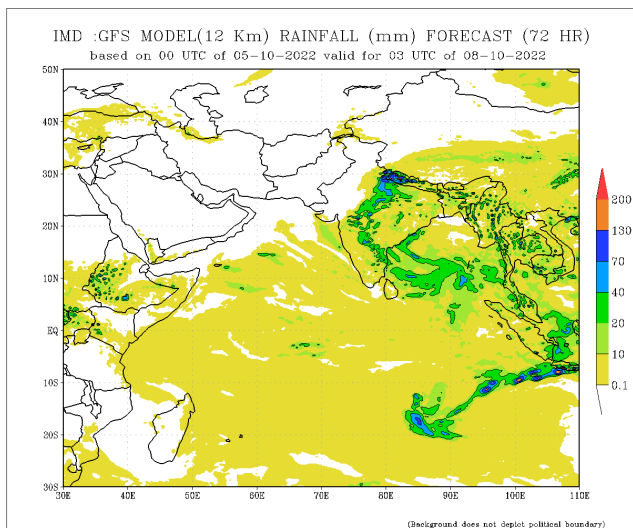
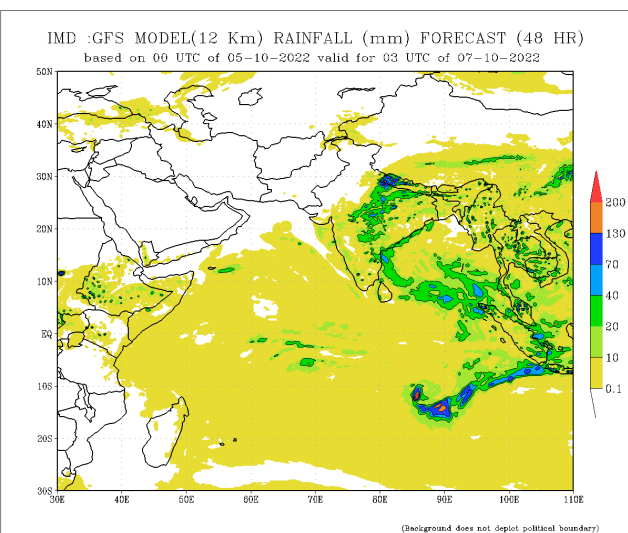
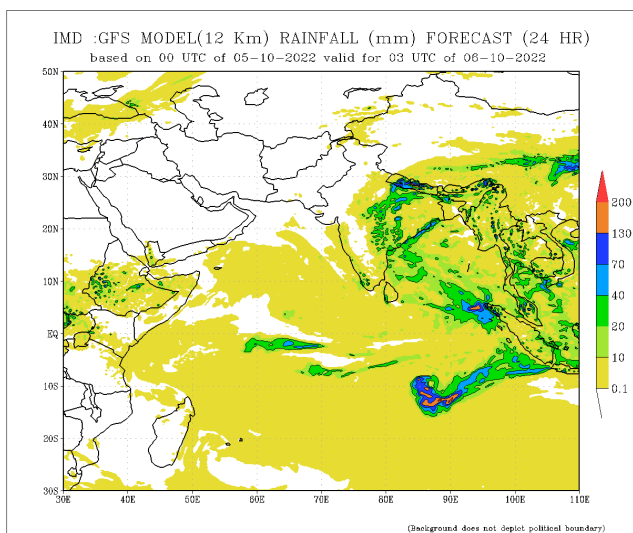


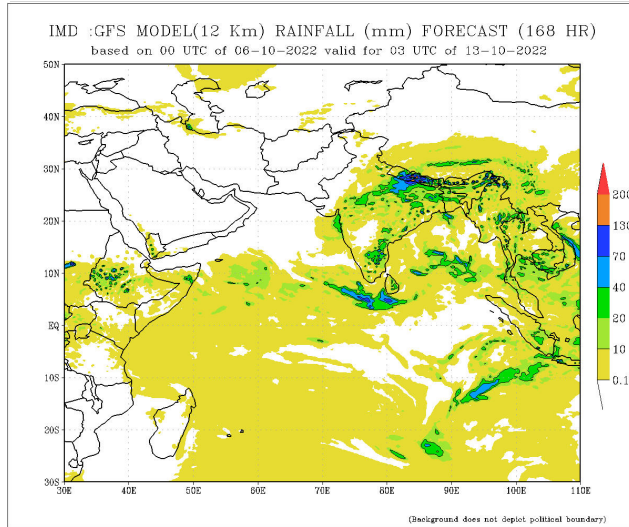
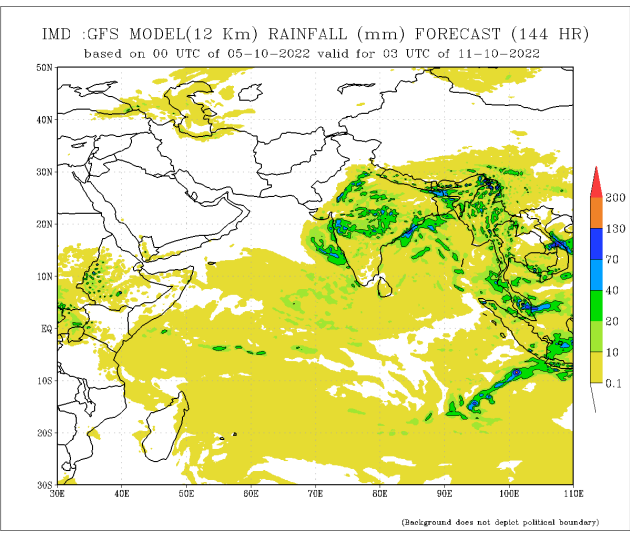
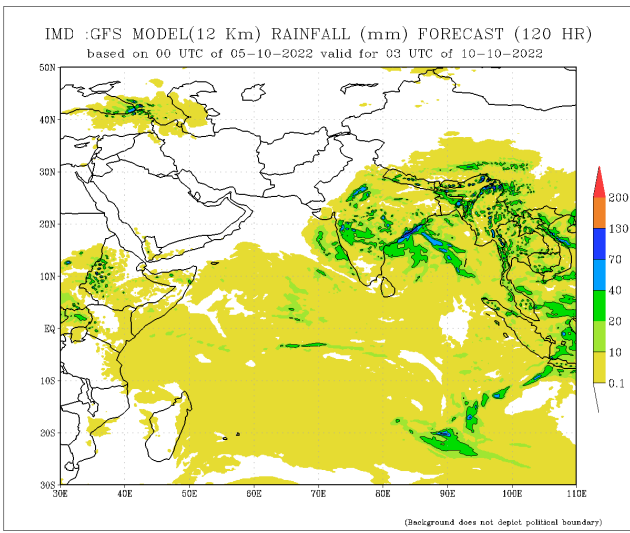


**NCEP GFS 1- 14 Day prediction**



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

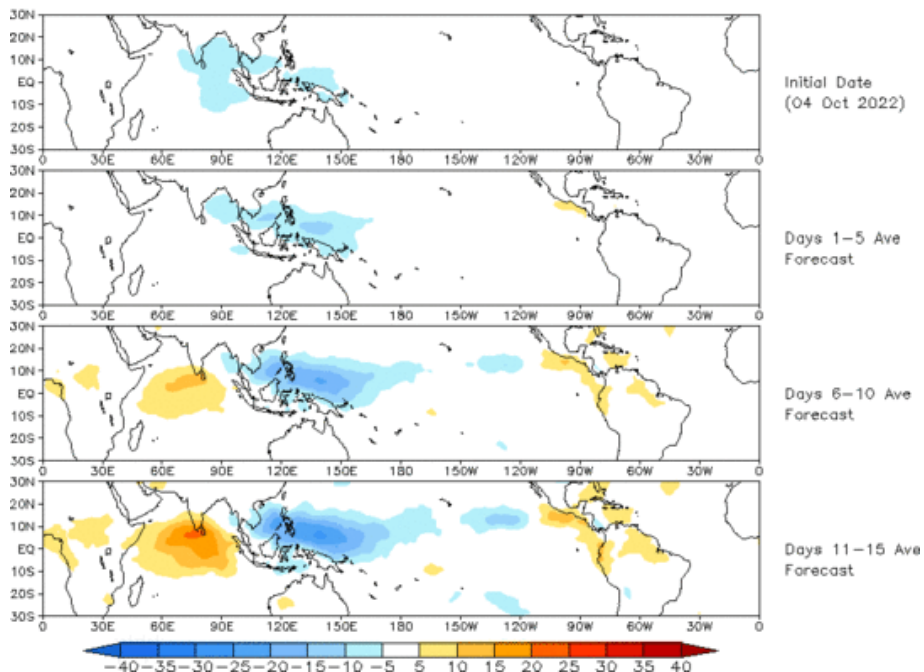




### Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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 (04 Oct 2022)

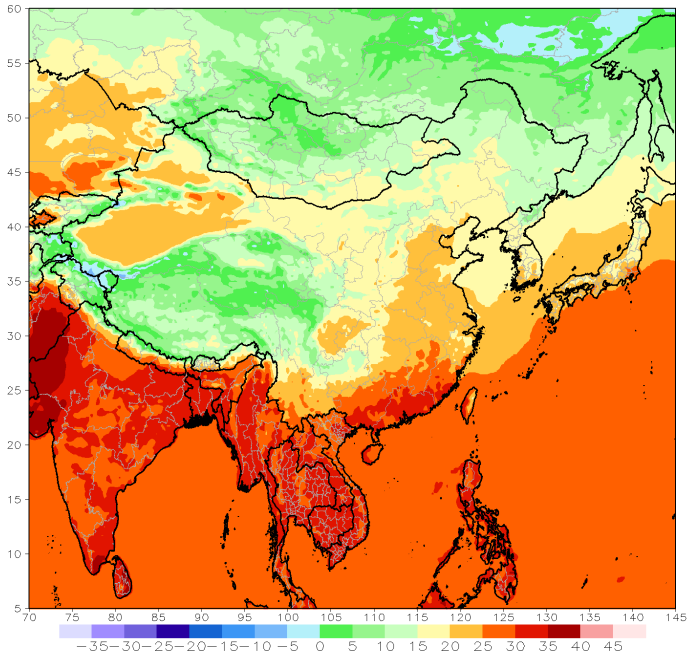


## Weekly Temperature Forecast

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

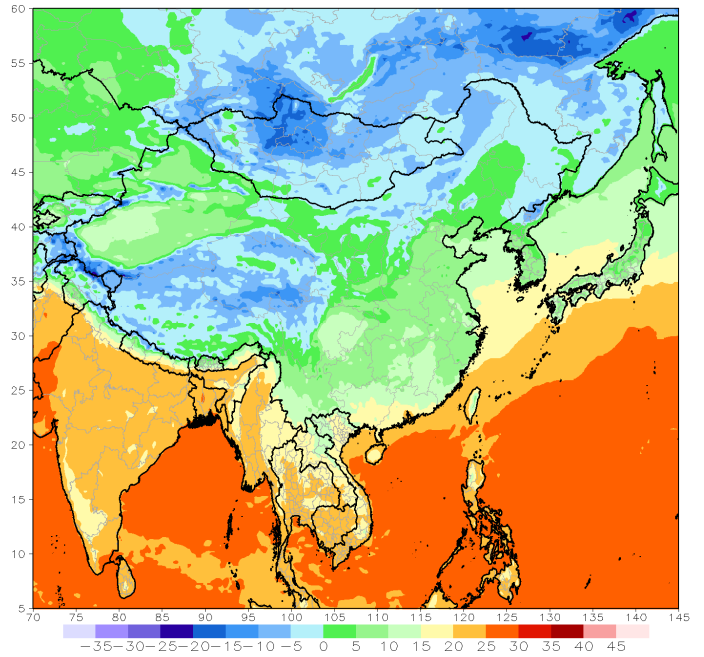
GFS week1 Temperature Max (C)

Period: 18z06Oct2022 - 18z12Oct2022



GFS week1 Temperature Min (C)

Period: 18z06Oct2022 - 18z12Oct2022

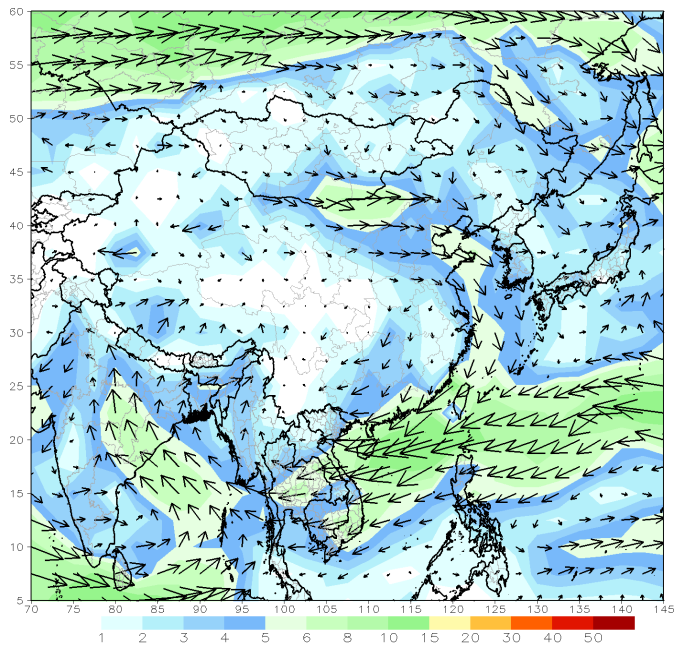


## Weekly Wind Forecast

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

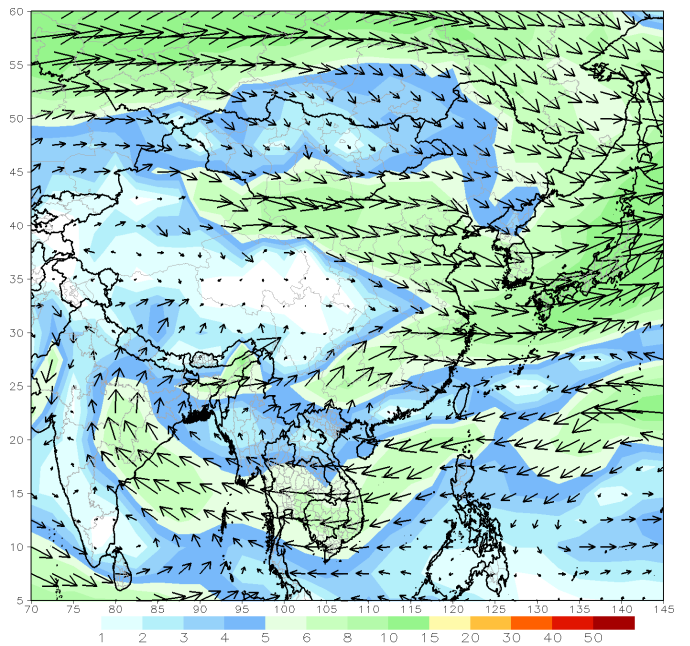
GFS 850mb week1 Mean Vector Wind Total (m/s)

Period: 18z06Oct2022 - 18z12Oct2022



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

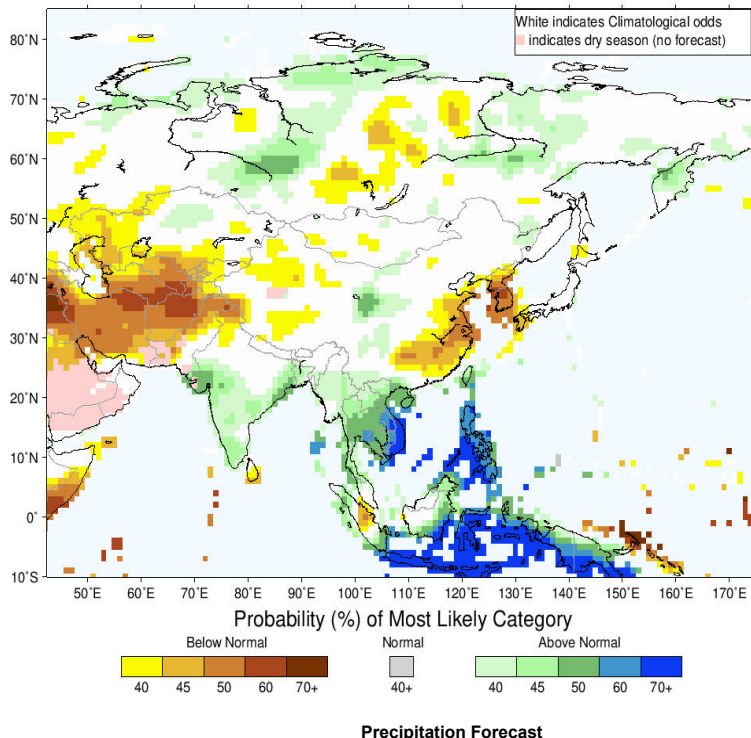
Period: 18z06Oct2022 - 18z12Oct2022



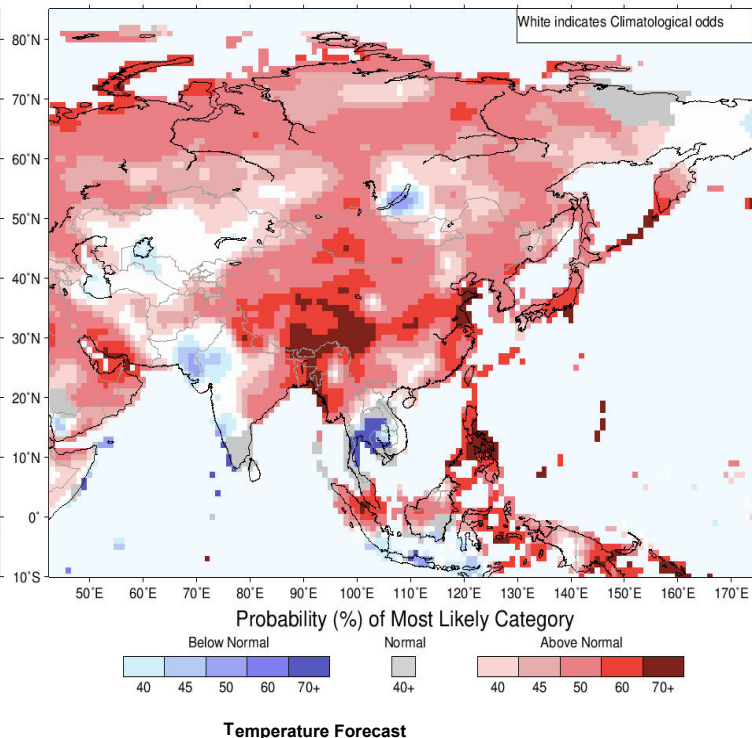
## Seasonal Rainfall and Temperature Forecast

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 October–November–December 2022, Issued September 2022



IRI Multi-Model Probability Forecast for Temperature for October–November–December 2022, Issued September 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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