11 NOVEMBER 2022

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *Heavy rainfall (≥135mm) is predicted for the Sabaragamuwa, Western, Northern,and Southern provinces during 9th - 15th Nov. During 10th - 22nd Nov heavy rainfall is predicted for Southern and Sabaragamuwa provinces.*

Monitored Rainfalls

- *During the last week,the average daily rainfall over Sri Lanka was 16.8 mm & hydro catchment areas received 15.3 mm on average.*

Monitored Wind

- *From 31st Oct -6th Nov, up to 5m/s of north-westerly and north-easterly winds were experienced at 850 mb level over the island. During 10th - 16th Nov, westerly winds are expected to the country .*

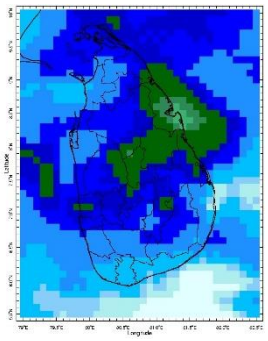
Monitored Sea & Land Temp

- *Sea surface temperature around Sri Lanka was above normal to the whole country in late - October*
- *Land surface temperature remained near normal.*

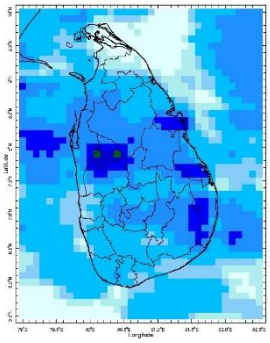
Monitoring

Rainfall

Daily Estimates for Rainfall from 1st November – 8th November 2022



1 November



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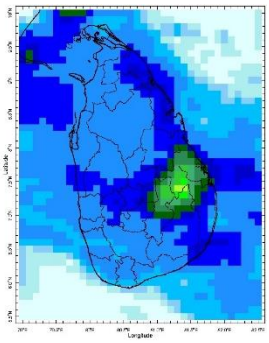
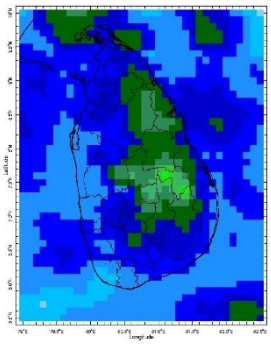
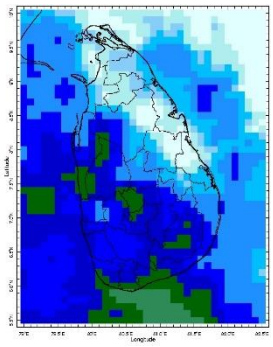


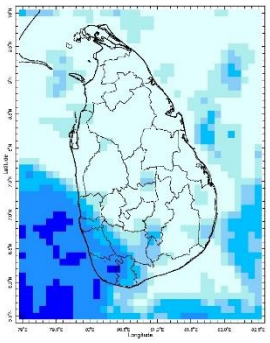
3 November



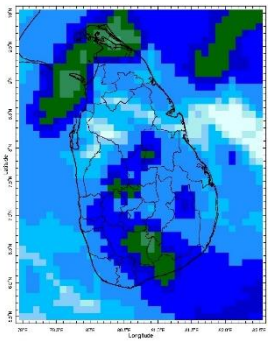
4 November



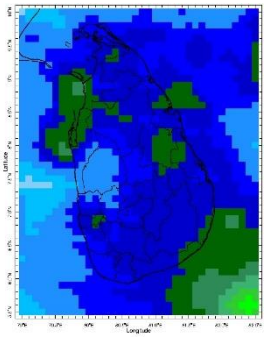
5 November



6 November



7 November



8 November

Federation for Environment, Climate & Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: November 7, 2022

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean early - November. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate La Niña is favored to continue through during the Northern Hemisphere winter (December-February) 2022-23, with a 54% chance for ENSO-neutral in February-April 2023.

Indian Ocean State

Sea surface temperature around Sri Lanka was above 0.5℃ to the whole country in 26th October, 2022. 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 9th November – 15th November:

Total rainfall by Provinces:

Rainfall	Provinces
> 135 mm	Western, Southern, Northern, Sabaragamuwa
135 mm	Eastern, Central
125 mm	North Western, North Central, Uva

From 16th November – 22nd November:

Total rainfall by Provinces:

Rainfall	Provinces
> 135 mm	Southern
135 mm	Sabaragamuwa
115 mm	Western
85 mm	Northern, Central, Uva
65 mm	Eastern, North Western
55 mm	North Central

MJO based OLR predictions

For the next 15 days:

MJO shall near neutral the rainfall during 9th– 23rd November for Sri Lanka.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been heavy rainfall over the following areas: Kegalle, Mullaitivu, Galle and Rathnapura

Daily Average Rainfall in the Met stations for previous week of (1st November – 8th November) = 16.8 mm
Rmax: 116.0 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	15.5 mm
Eastern	20.0 mm
Western	14.6 mm
Southern Plains	19.8 mm

The Hydro Catchment Areas recorded 15.3 mm of average rainfall for the last week
Rmax: 74.5 mm & Rmin: 0.0 mm.
Wind: North-westerly and North-easterly winds prevailed in the sea area and around the island last week.
Temperatures: The temperature anomalies were below normal for some parts of the Northern province, and above normal for some parts of the Southern province, driven by the warm SST's.

Predictions

Rainfall: During the next week (9th – 15th November), above 135 mm rainfall is predicted for the Western, Northern, Southern and Sabaragamuwa provinces; and heavy (≥ 125 mm) rainfall is expected for the rest of the country.
Temperatures: The temperature will remain below normal for some parts of the Central and Uva provinces during 10th – 16th November.
Teleconnections: La Niña is favored to continue through during the Northern Hemisphere winter (December-February) 2022-23, with a 54% chance for ENSO-neutral in February-April 2023.
MJO shall near neutral the rainfall during 9th– 23rd November for Sri Lanka.
Seasonal Precipitation: The precipitation forecast for the November-December-January 2023 season shows a higher tendency for above-normal precipitation in the north 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, [1] International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.

Federation for Environment, Climate & Technology

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Weekly Climate Bulletin for Sri Lanka

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   e. Weekly Wind Forecast
   f. Seasonal Predictions from IRI

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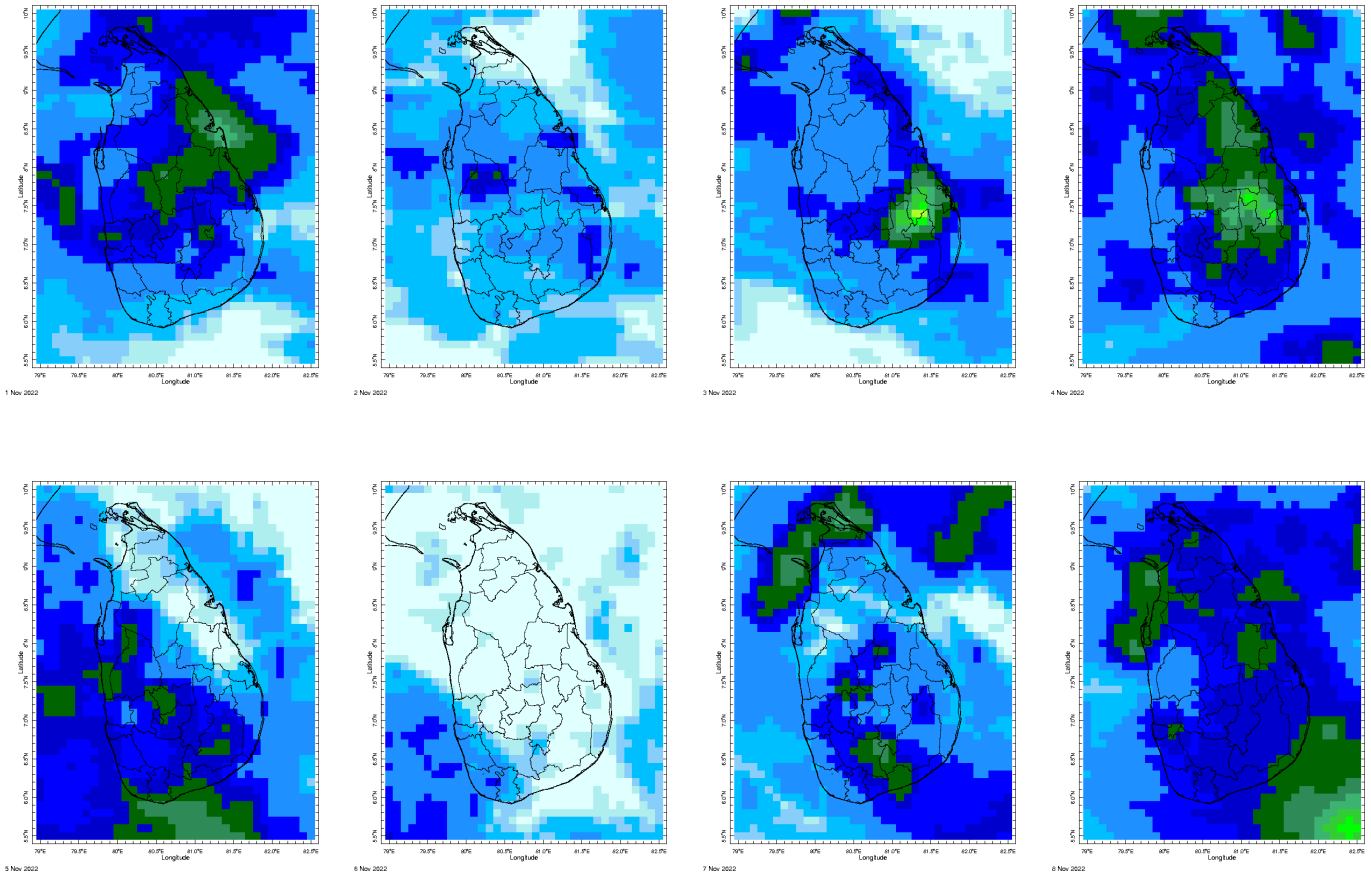
MONITORING

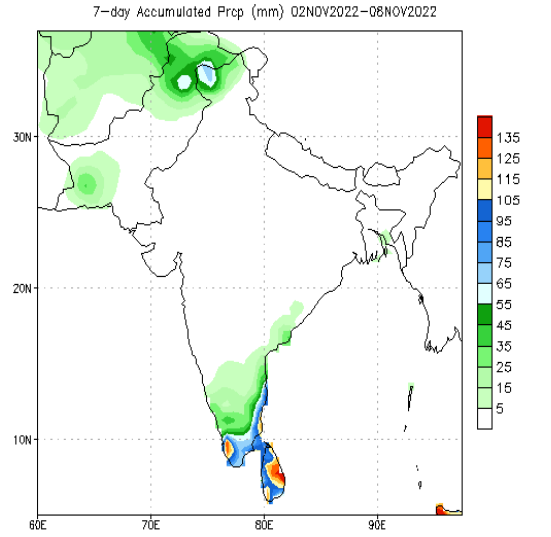
Daily Rainfall Monitoring

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

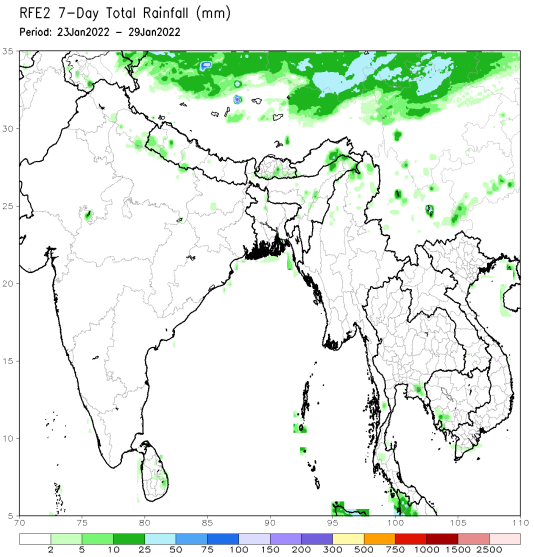


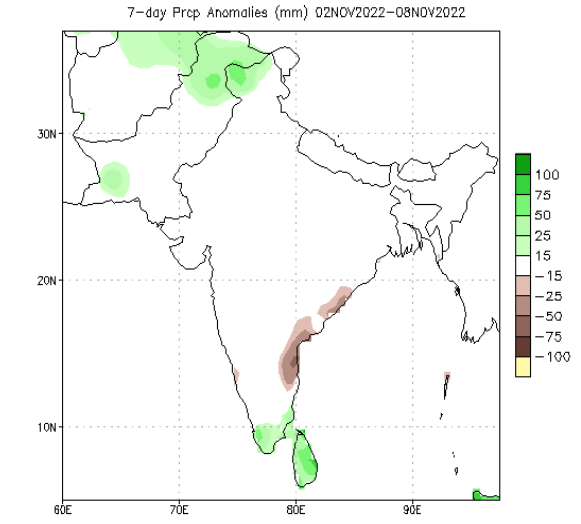
Weekly Rainfall Monitoring

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.

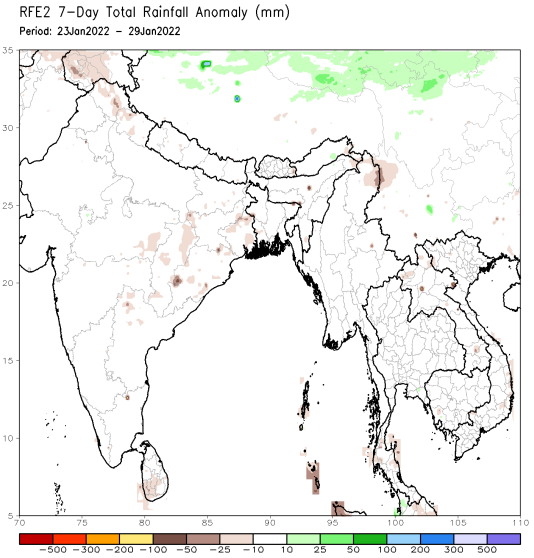


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



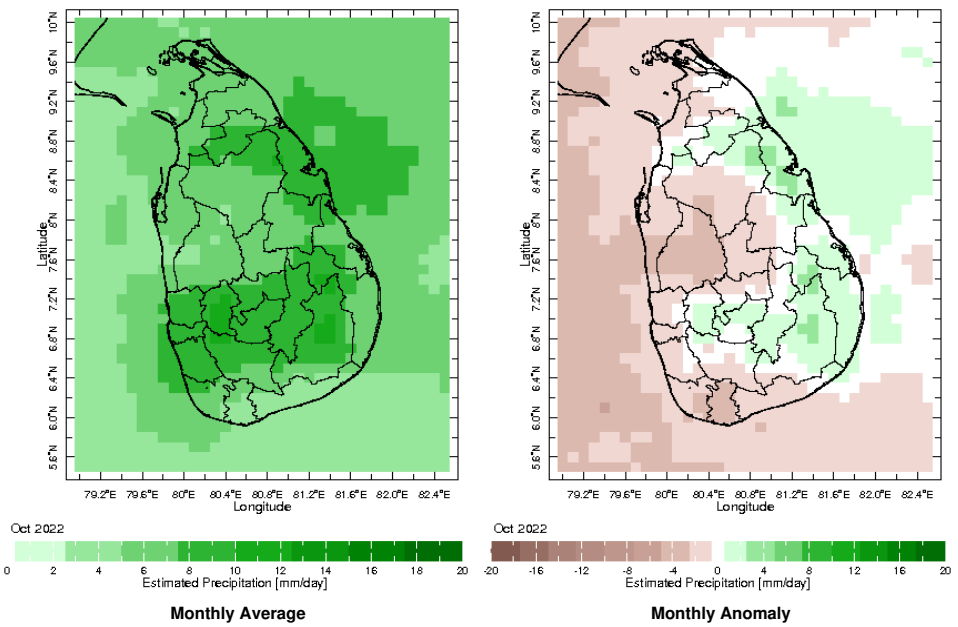


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1991-2020)

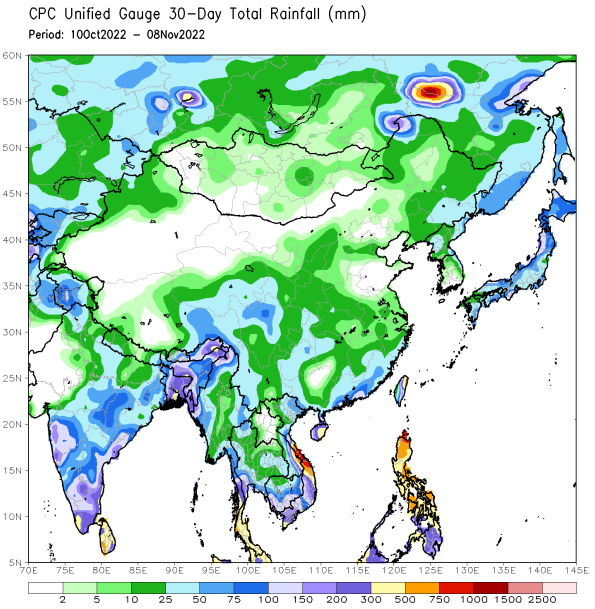


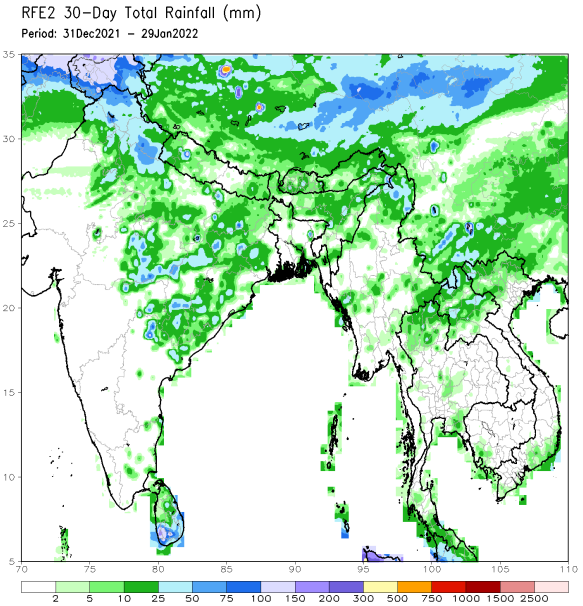
Monthly Rainfall Monitoring

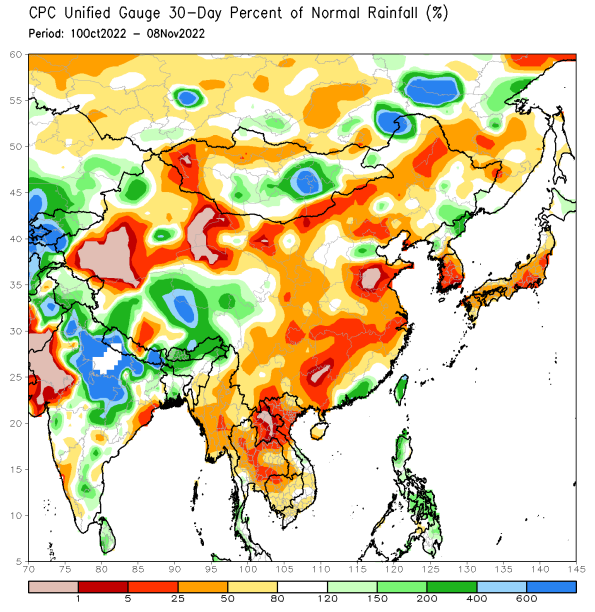
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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

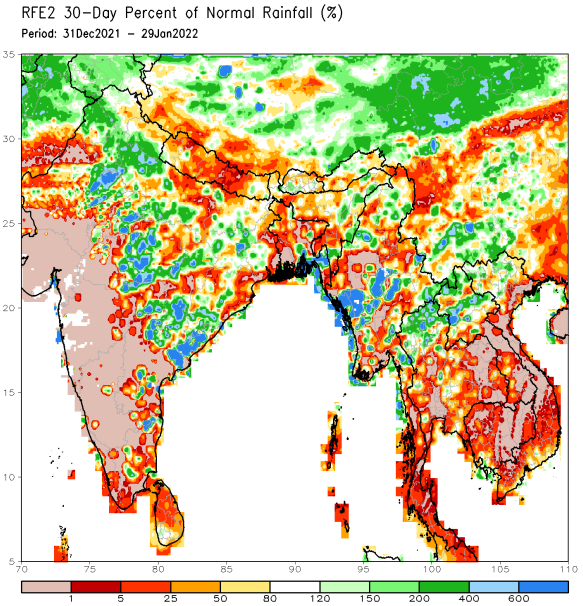


The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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

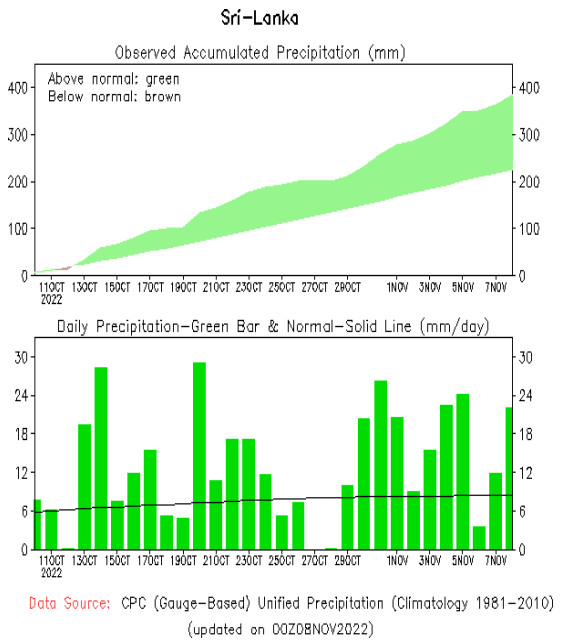




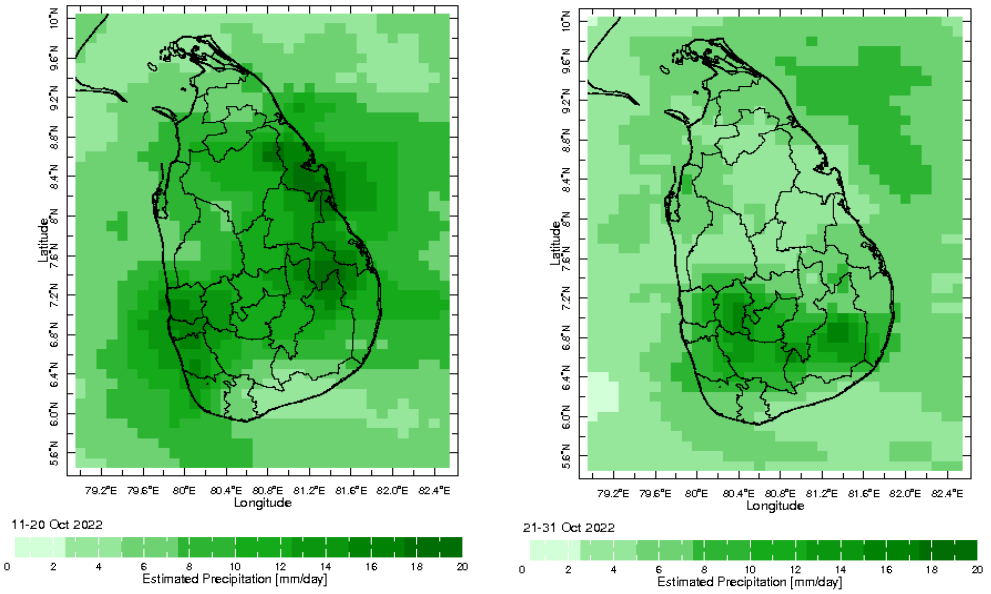




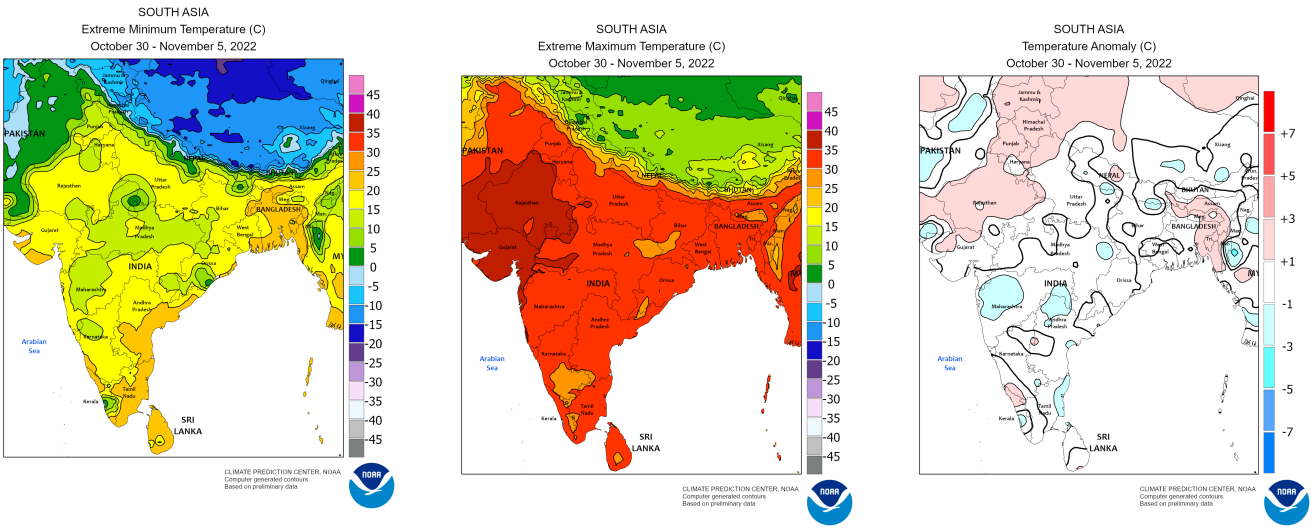
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

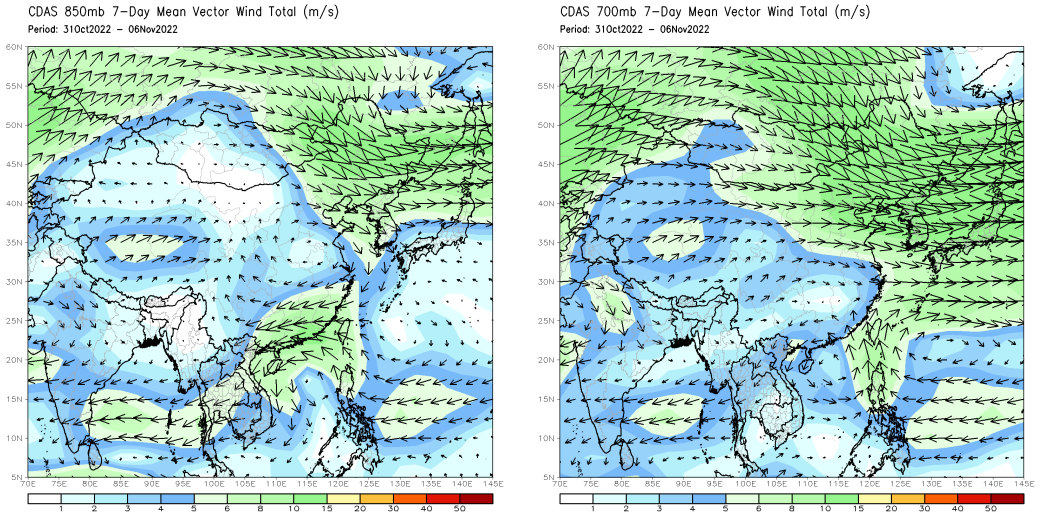


Weekly Temperature Monitoring



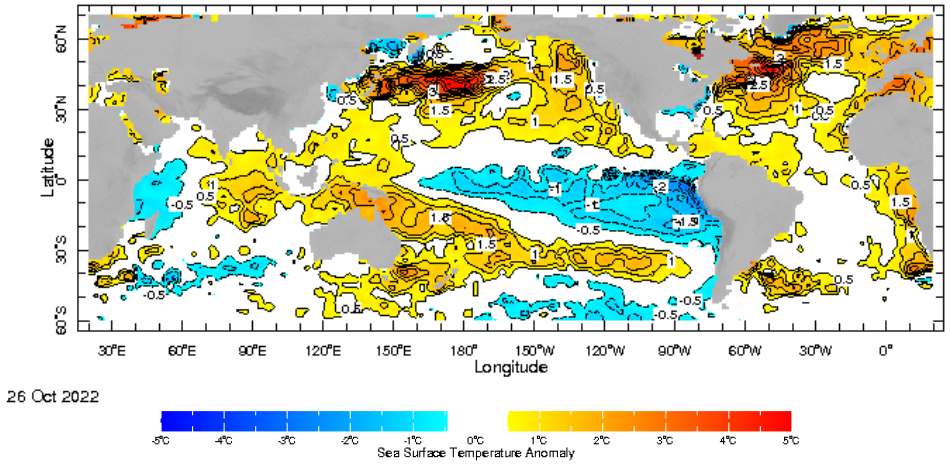
Weekly Wind Monitoring

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.



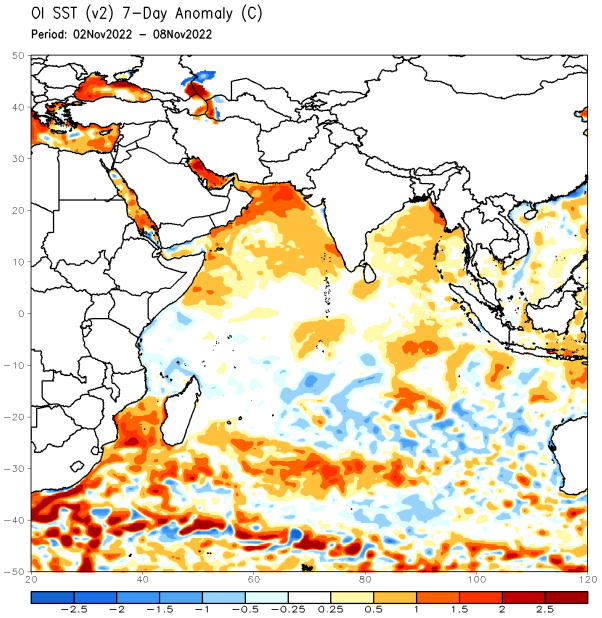
Weekly Average SST Anomalies

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

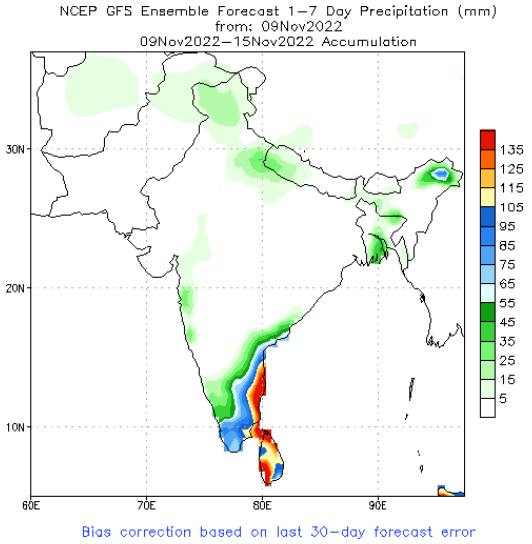


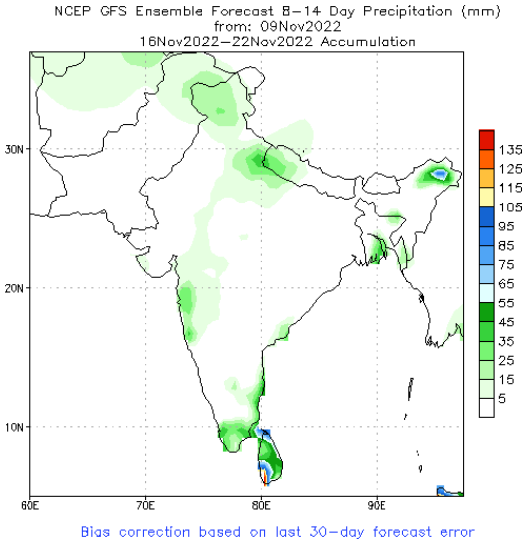
WORLDBATH topography

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

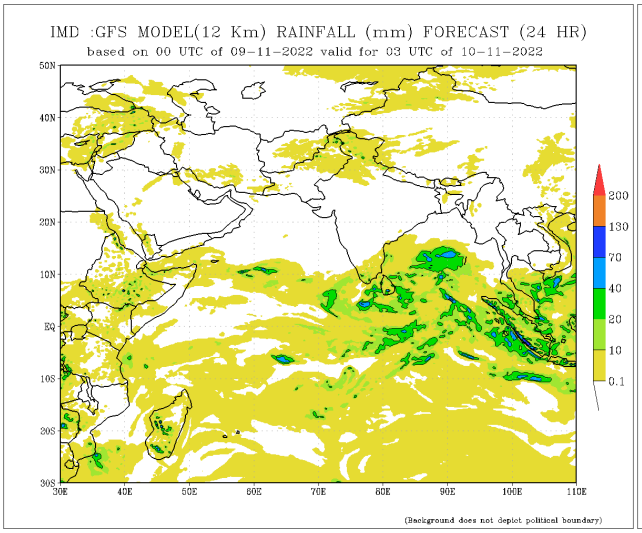


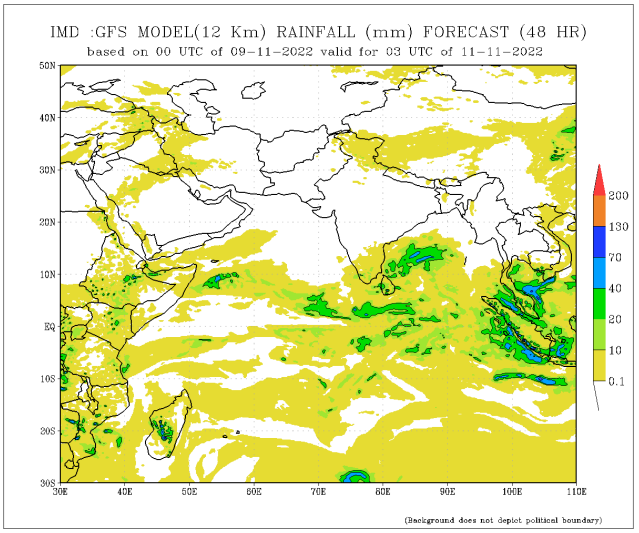
NCEP GFS 1- 14 Day prediction

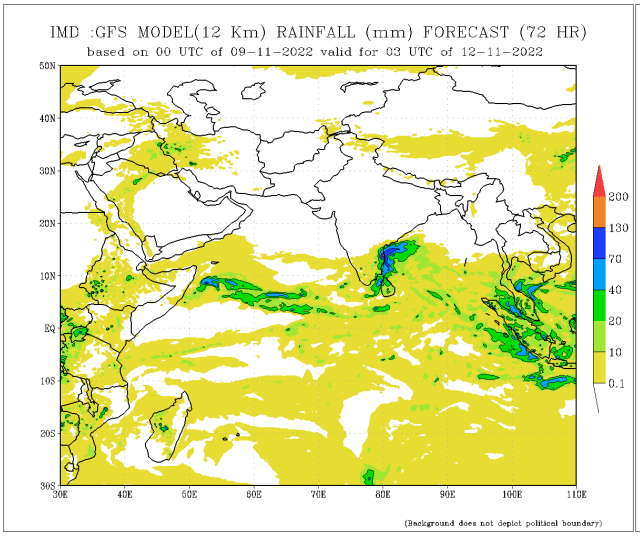


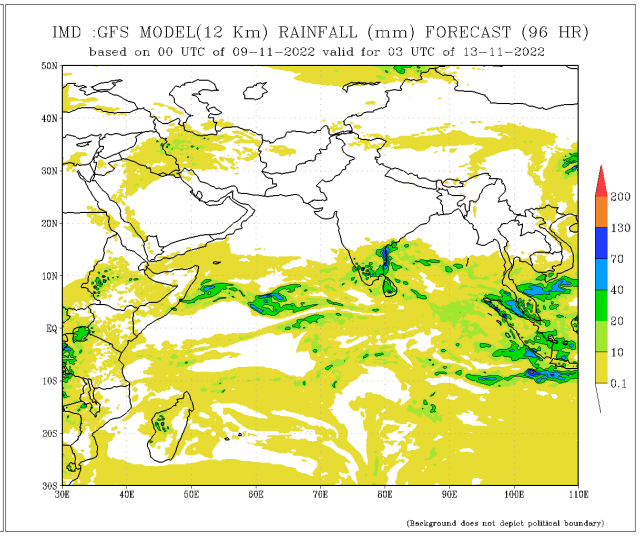


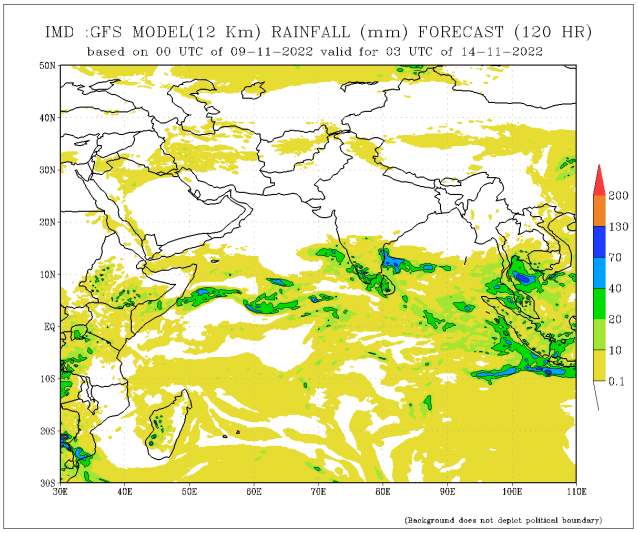
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

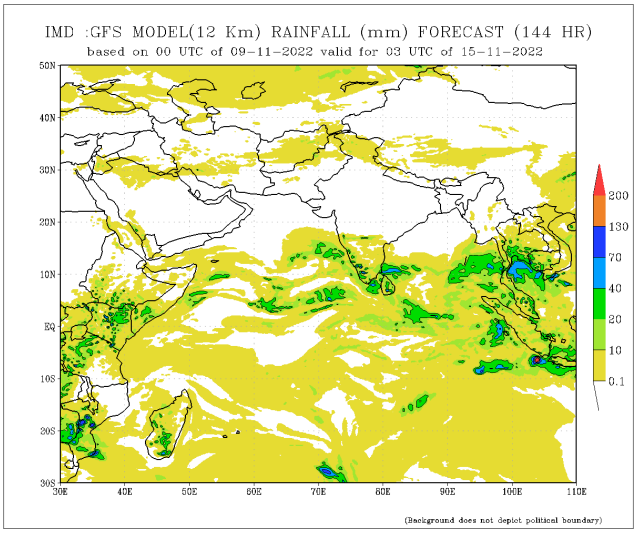






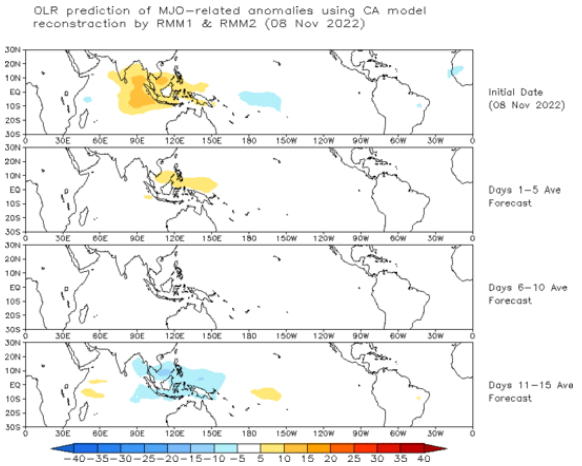






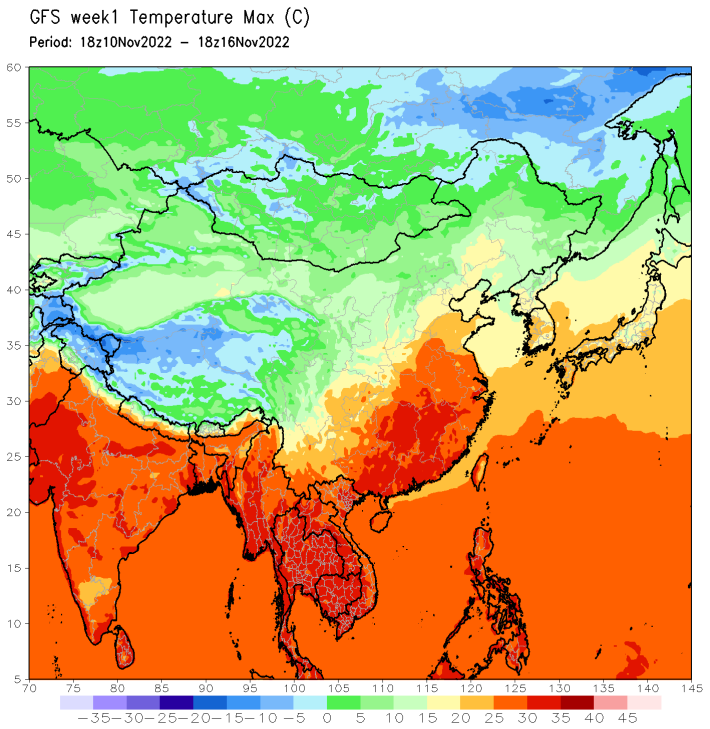
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

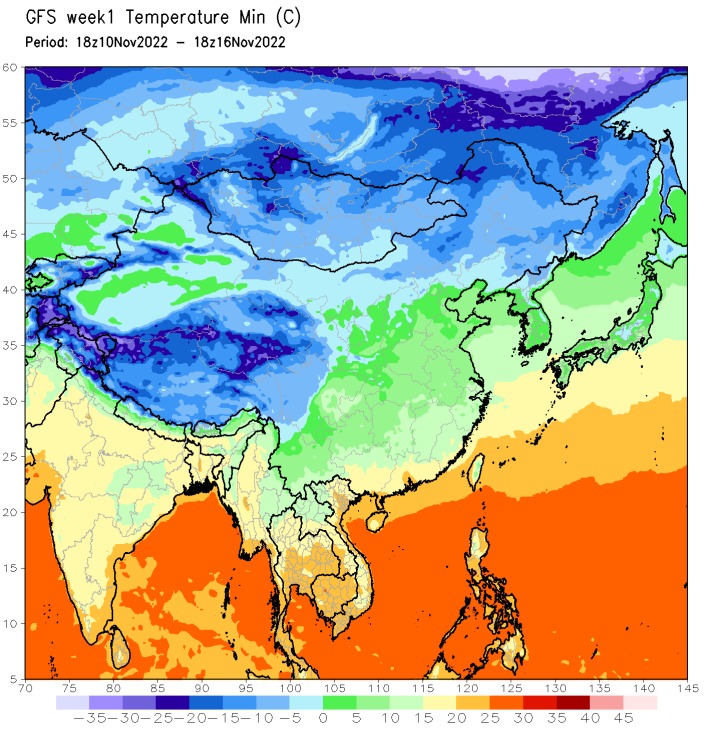
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



Weekly Temperature Forecast

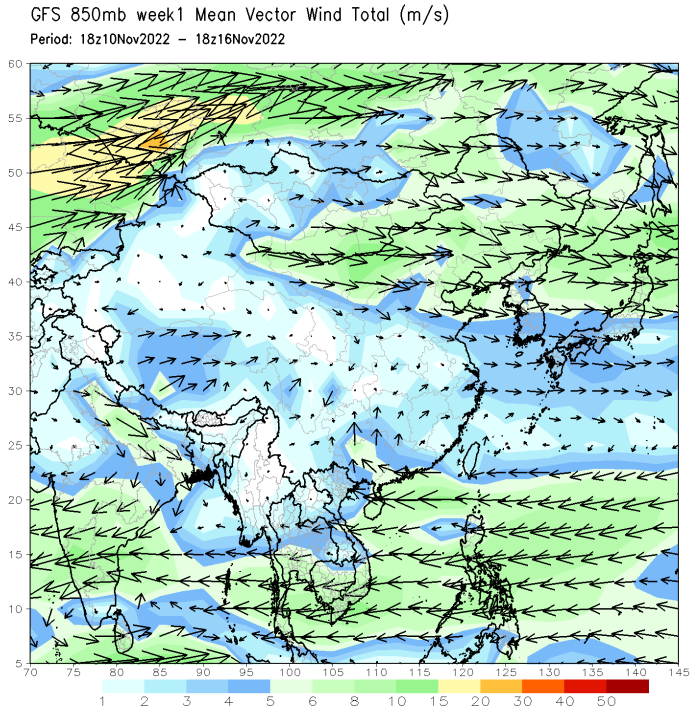
Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

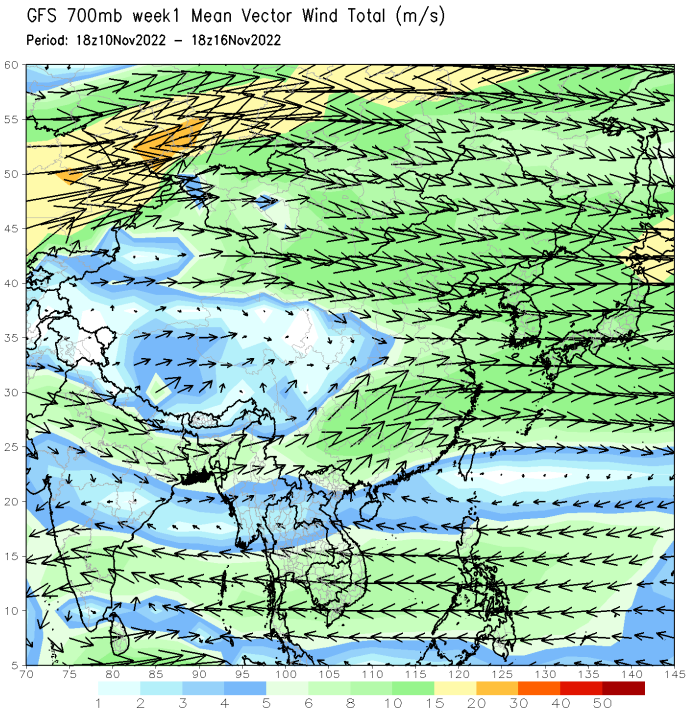




Weekly Wind Forecast

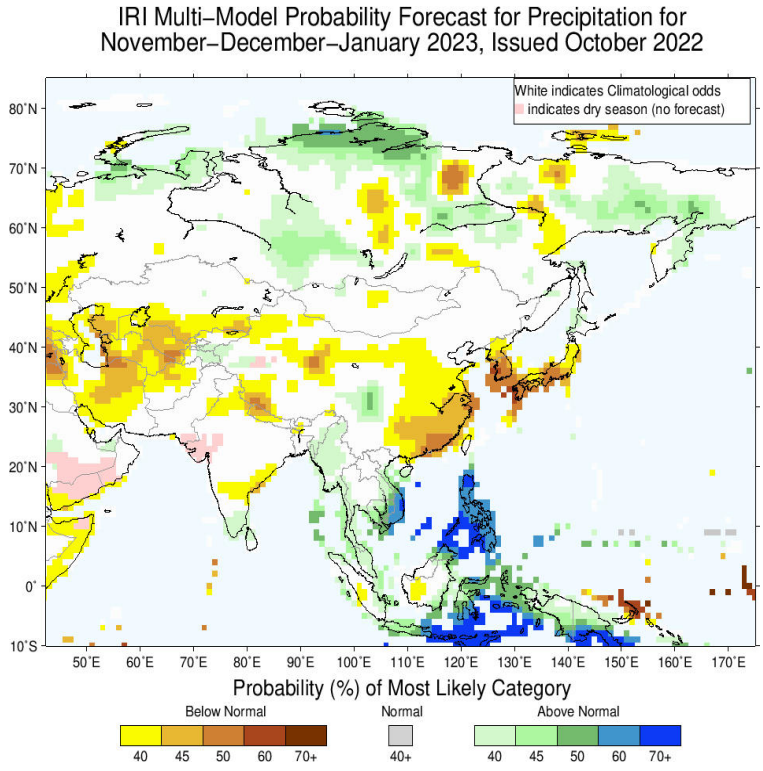
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



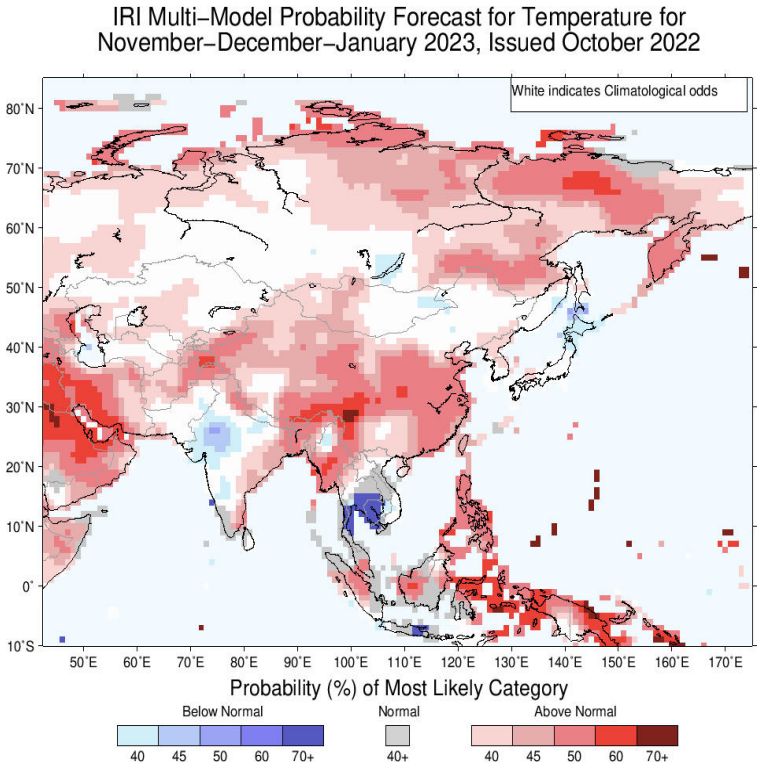


Seasonal Rainfall and Temperature Forecast

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.

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