

HIGHLIGHTS

Rainfall Prediction



• Heavy rainfall (≥ 145 mm) is predicted for the Western, Southern and Sabaragamuwa provinces, and >100 mm rainfall is expected for the Central, Uva, North Western and Eastern provinces during 12th - 18th October.

Monitored Rainfalls



• During the last week, the average daily rainfall over Sri Lanka was 4.2 mm and hydro catchment areas received 3.1 mm on average.

Monitored Wind



• From 3rd -9th October, up to 10m/s of north-westerly winds were experienced at 850 mb level over the island. Westerly winds are expected next week.

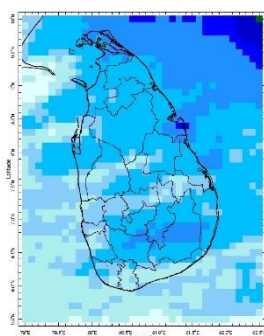
Monitored Sea & Land Temp



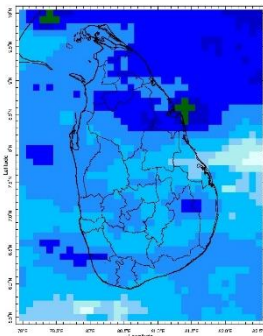
• Sea surface temperature around Sri Lanka was near normal to the whole country. Land surface temperature remained near normal.

Monitoring Rainfall

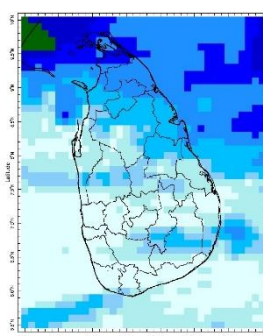
Daily Estimates for Rainfall from 4th October –11th October 2022



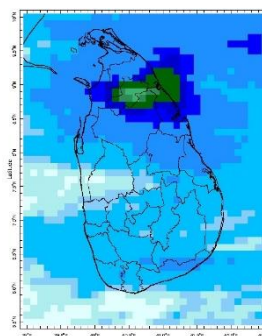
4 October



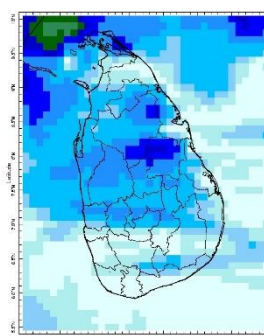
5 October



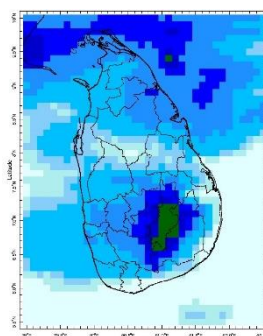
6 October



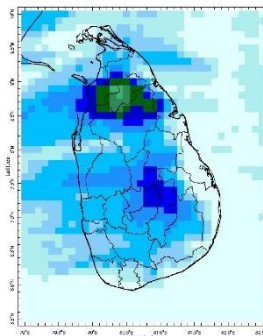
7 October



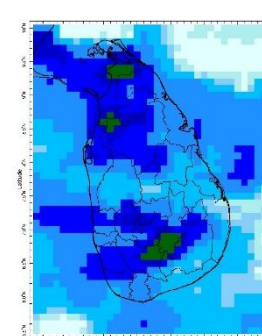
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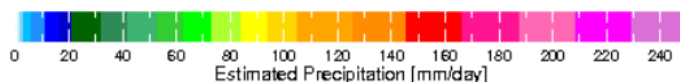
9 October



10 October



11 October



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Ocean State *(Text Courtesy IRI)*

Pacific sea state: October 10, 2022

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean mid - 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 near normal to the whole country. 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 12th October – 18th October:

Total rainfall by Provinces:

Rainfall	Provinces
≥145 mm	Southern, Sabaragamuwa, Western
135 mm	Central, Uva
115 mm	Eastern, North Western
85 mm	North Central
65 mm	Northern

From 19th October – 25th October:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall moderately suppress the rainfall during 12th– 26th October for Sri Lanka.

Interpretation

Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (4th - 11th October) = 4.2 mm
Rmax: 85.6 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	4.0 mm
Eastern	7.5 mm
Western	2.5 mm
Southern Plains	0.4 mm

The Hydro Catchment Areas recorded 3.1 mm of average rainfall for the last week
Rmax: 40.5 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 province, driven by the warm SST's.

Predictions

Rainfall: During the next week (12th - 18th October) heavy rainfall (≥ 145 mm) is predicted for the Western, Sabaragamuwa and Southern provinces, and >100 mm rainfall is expected for the Central, Uva, North Western and Eastern provinces of the country.

Temperatures: The temperature will remain above normal to the east of the country during 13th – 19th 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 moderately suppress the rainfall during 12th– 26th 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, ¹ International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.



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2. Predictions

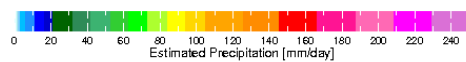
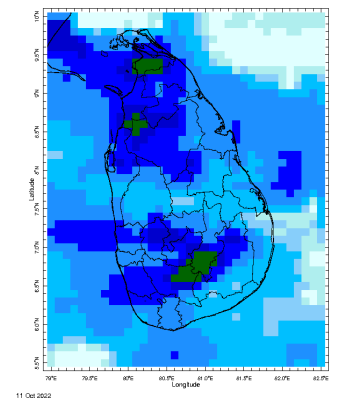
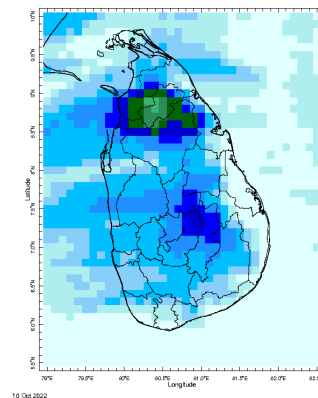
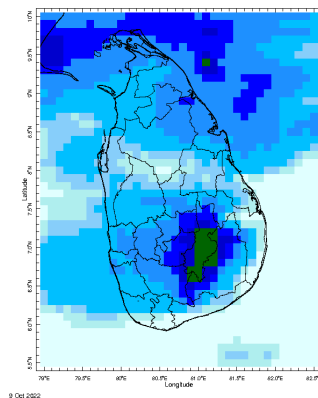
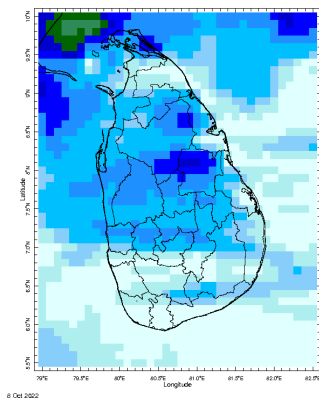
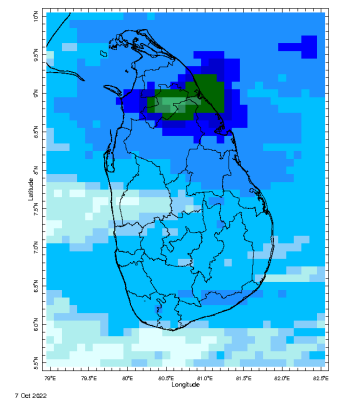
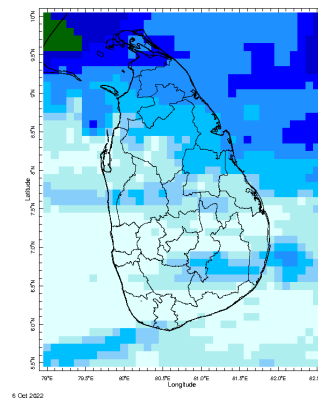
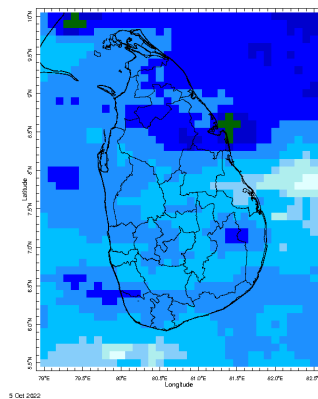
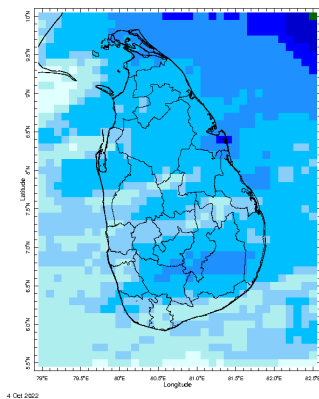
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- c. MJO Related OLR Forecast
- d. Weekly Temperature Forecast
- e. Weekly Wind Forecast
- f. Seasonal Predictions from IRI



MONITORING

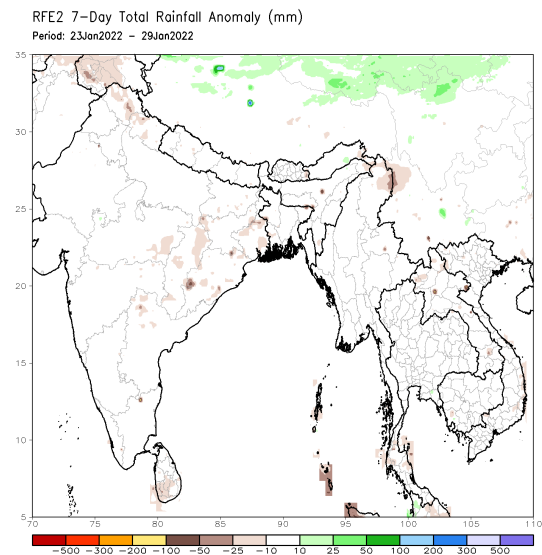
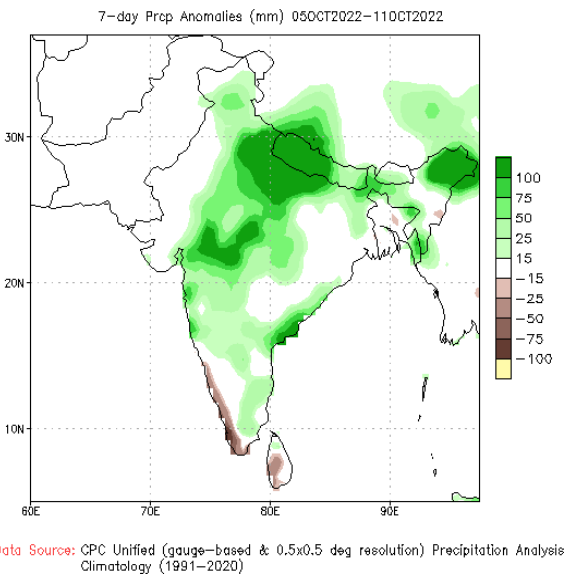
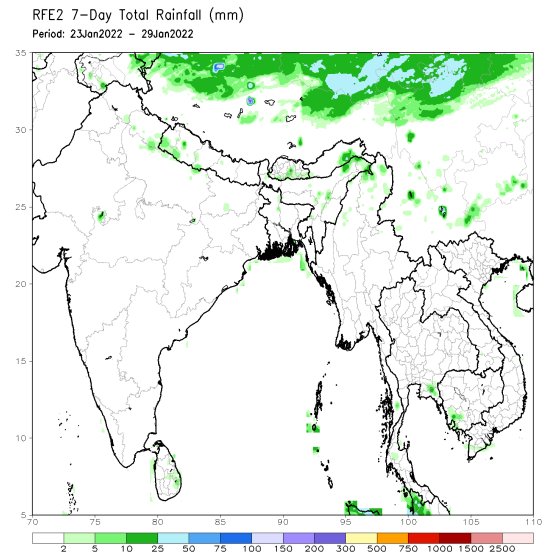
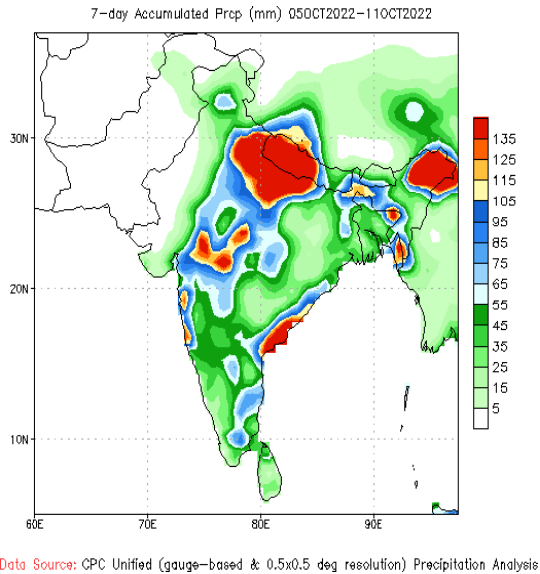
Daily Rainfall Monitoring

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



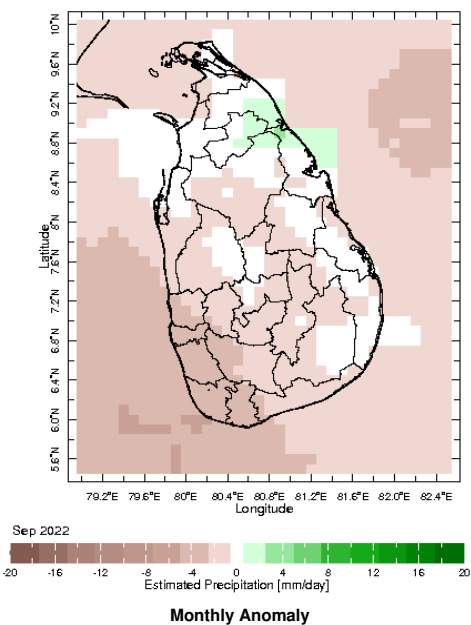
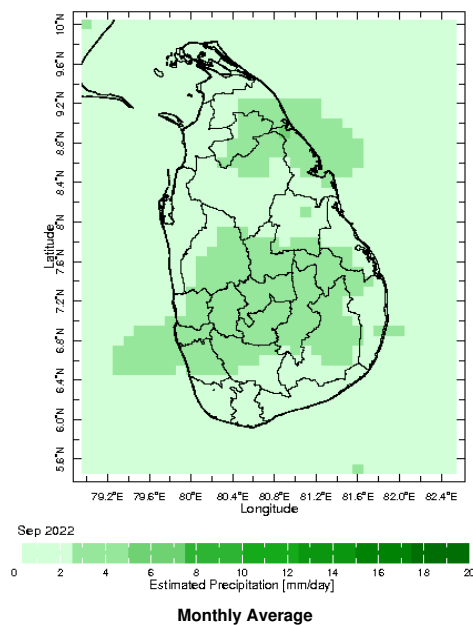
Weekly Rainfall Monitoring

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.

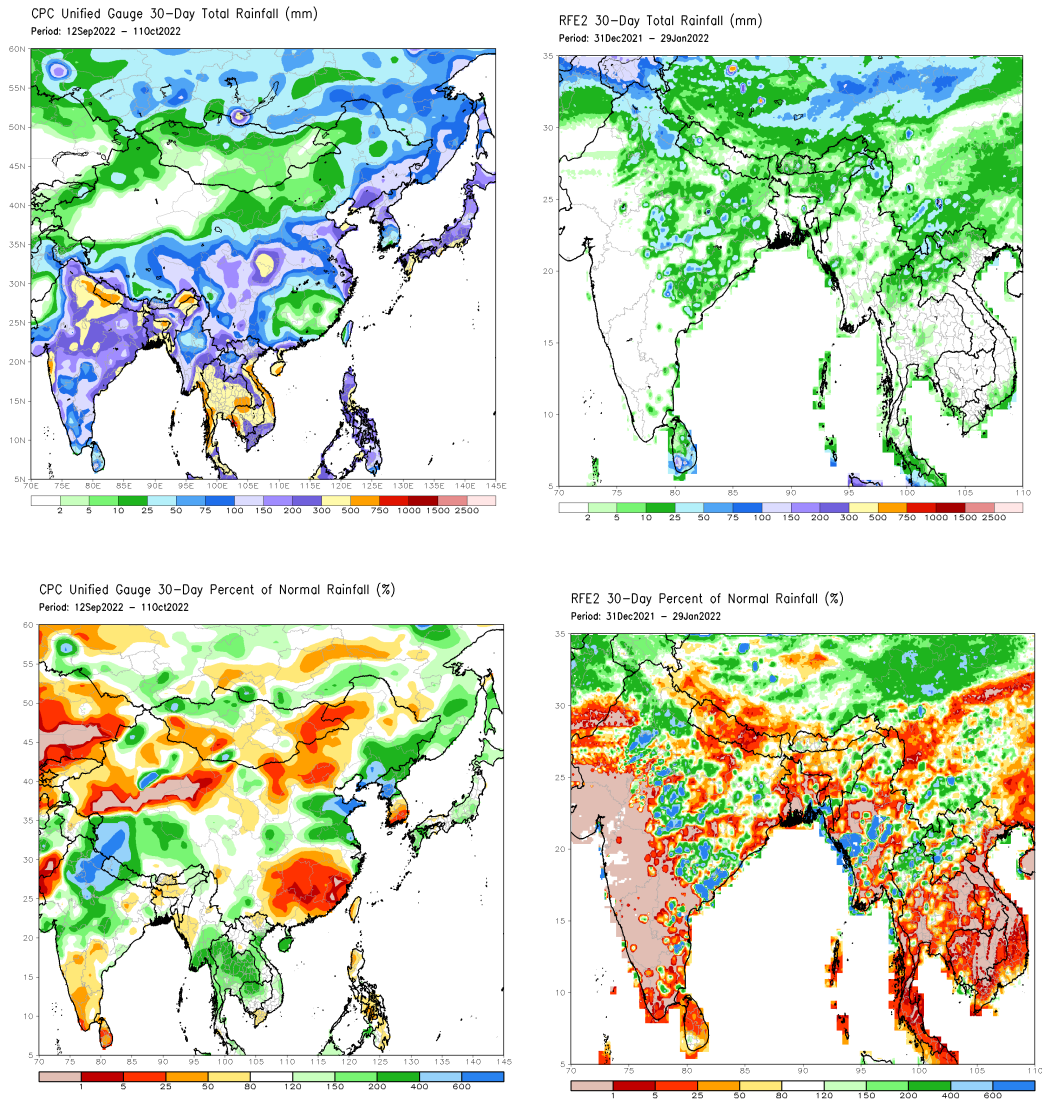


Monthly Rainfall Monitoring

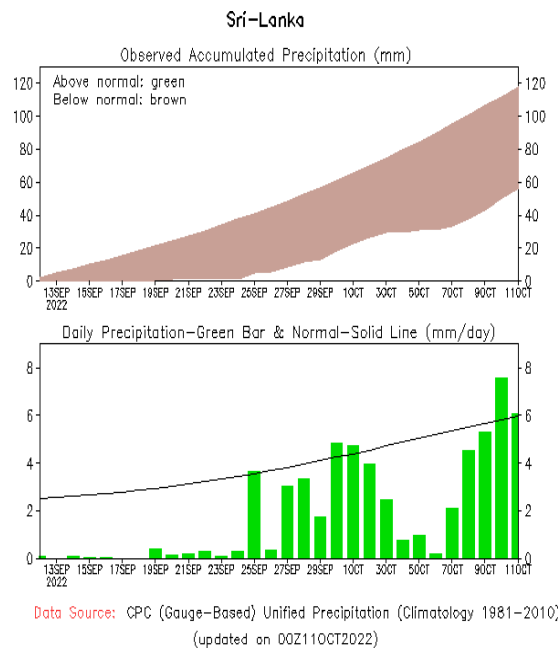
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



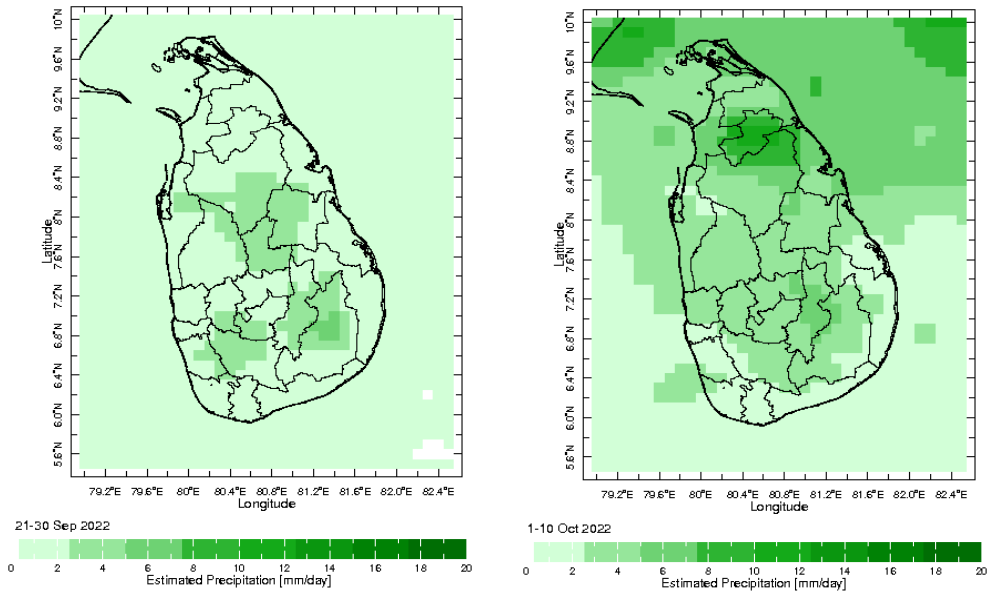
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



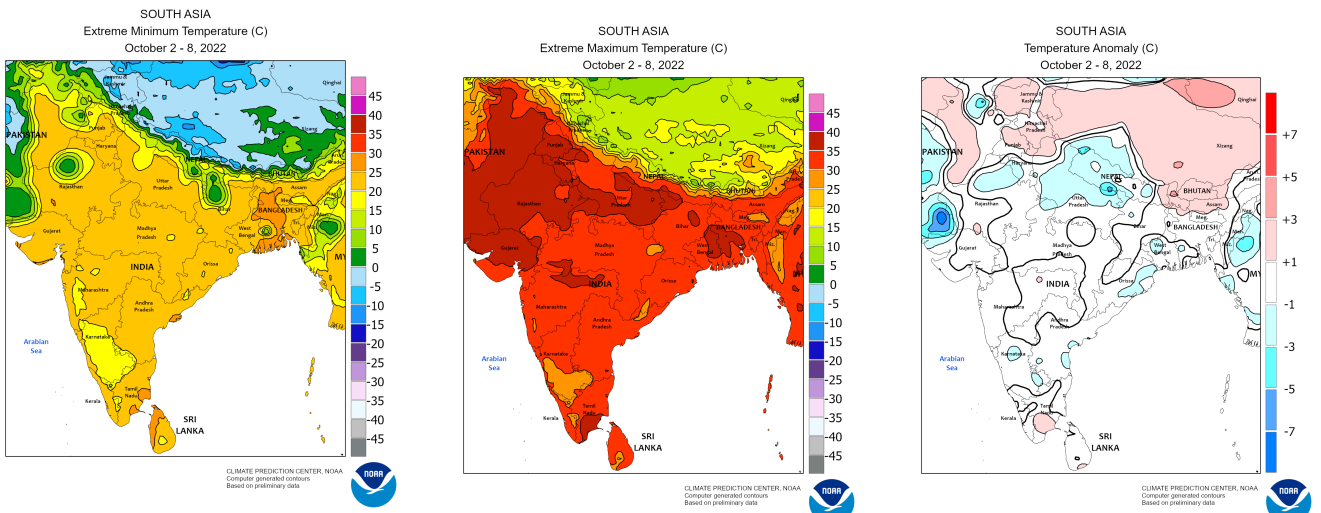
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

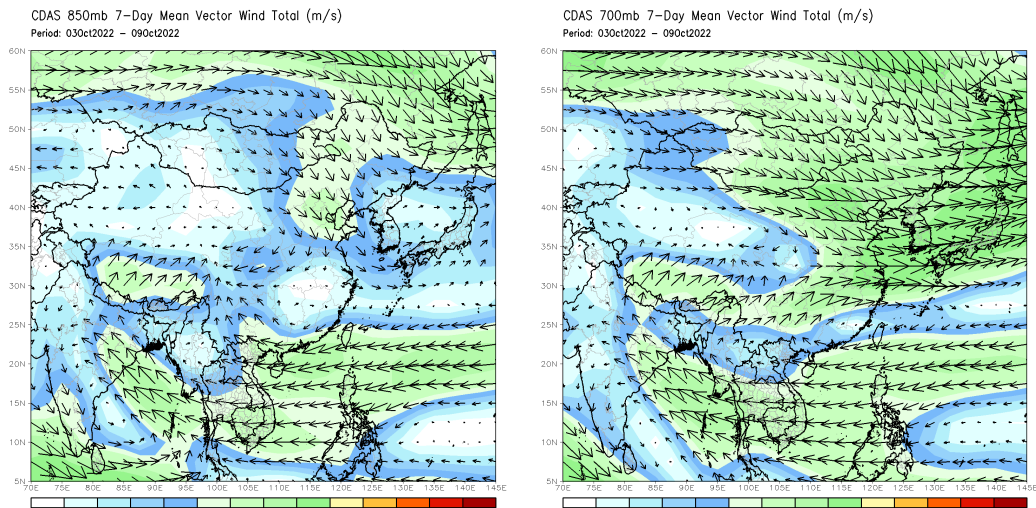


Weekly Temperature Monitoring



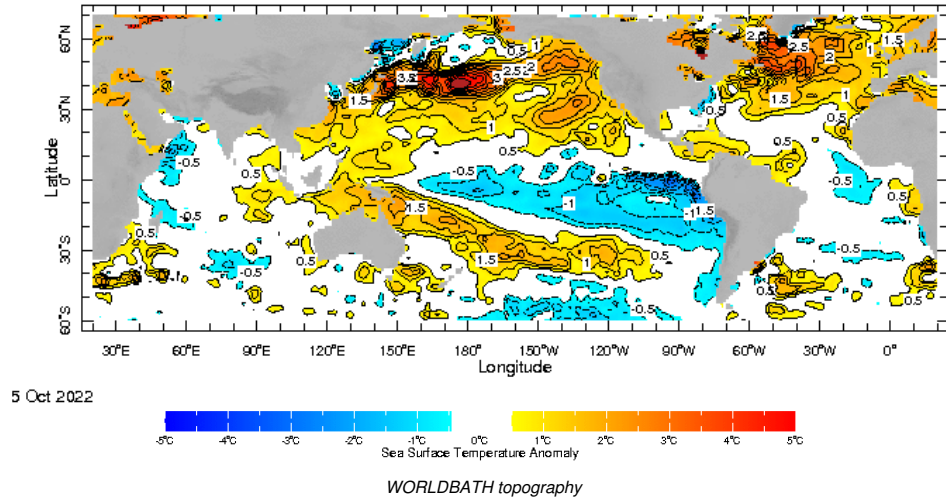
Weekly Wind Monitoring

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.

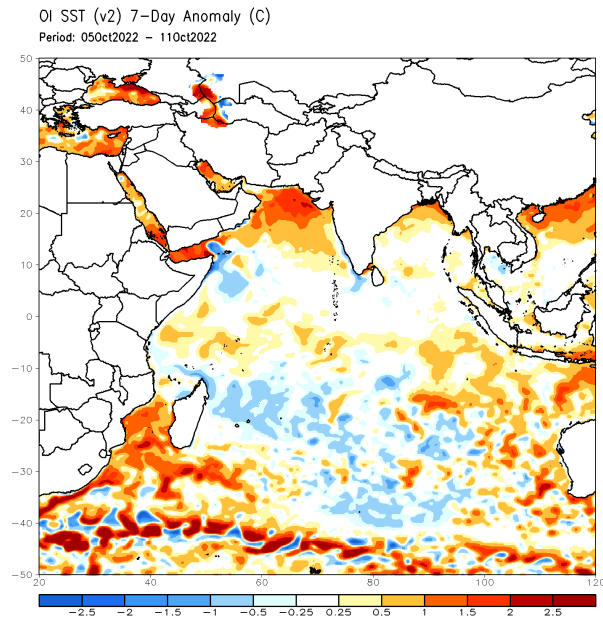


Weekly Average SST Anomalies

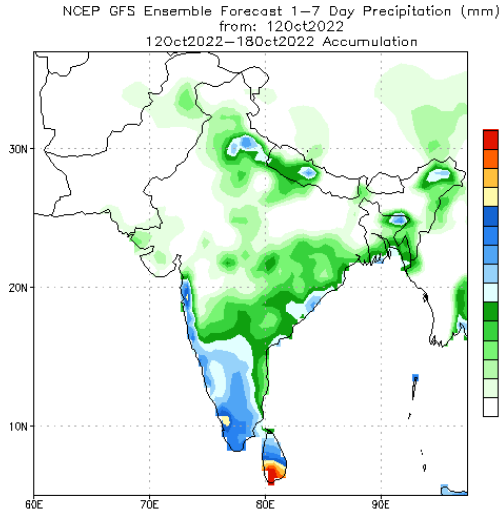
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



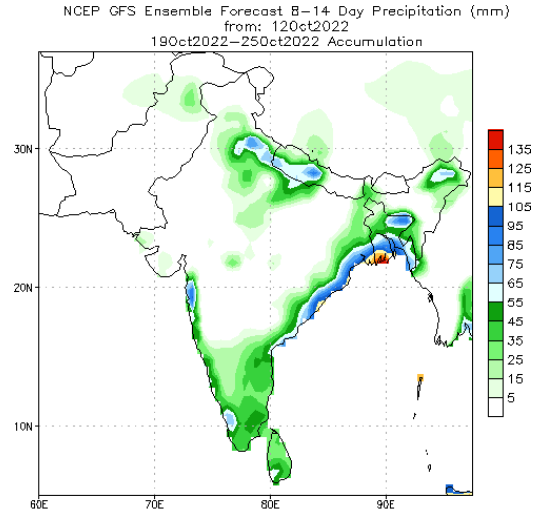
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



NCEP GFS 1- 14 Day prediction

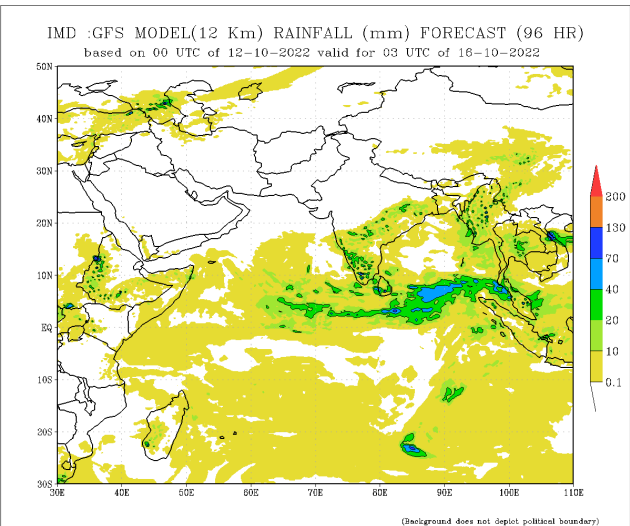
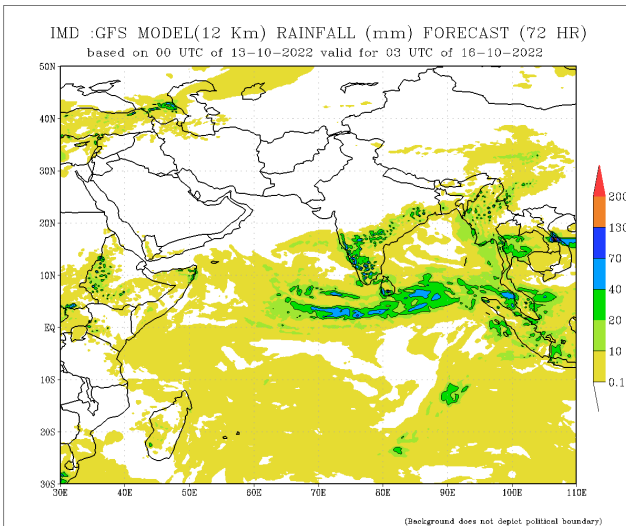
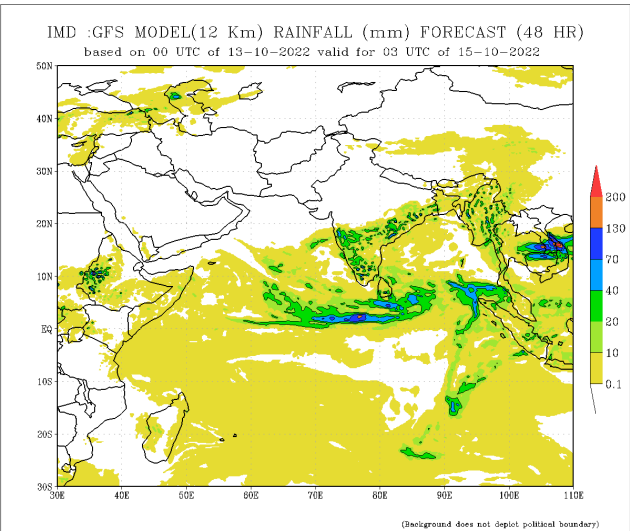
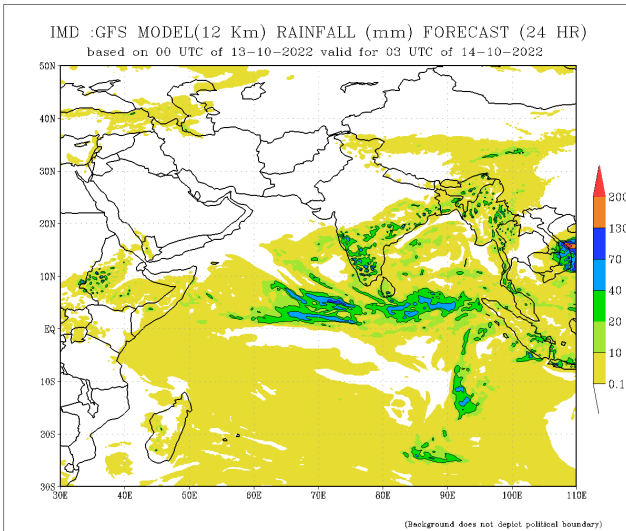


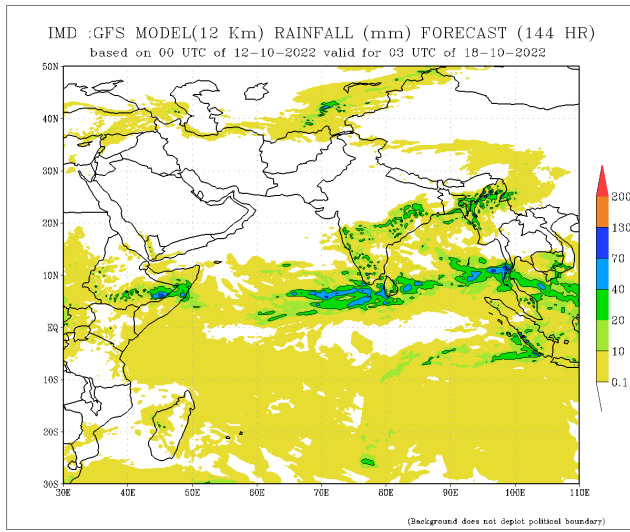
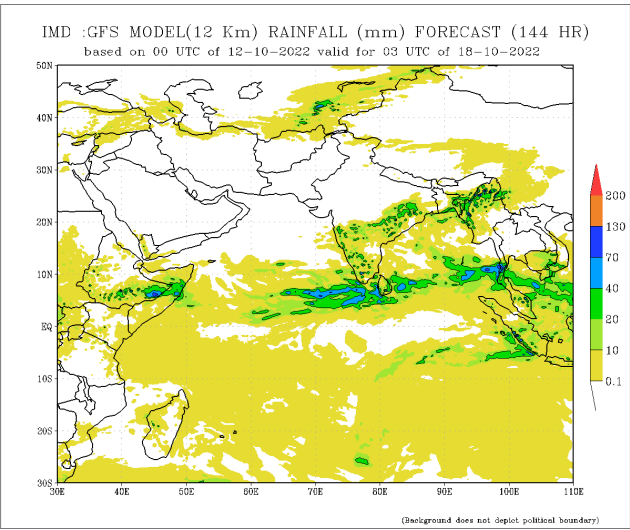
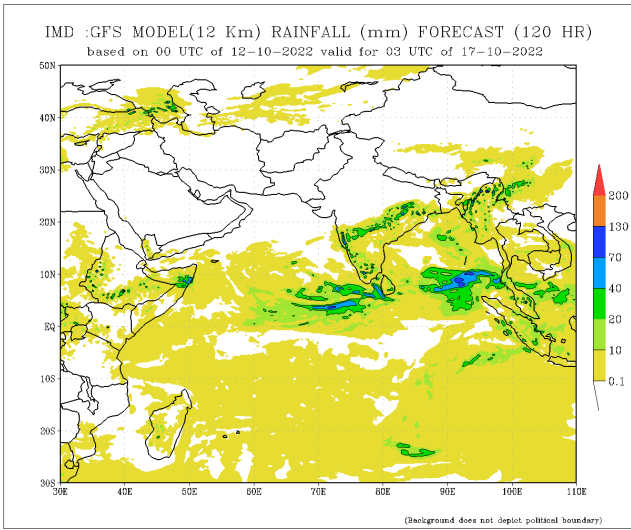
Bias correction based on last 30-day forecast error



Bias correction based on last 30-day forecast error

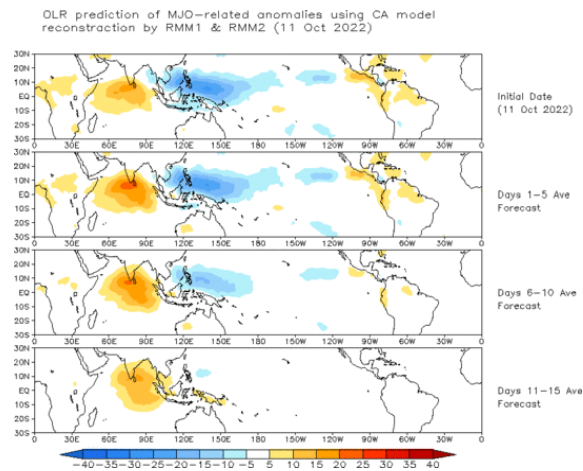
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India





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

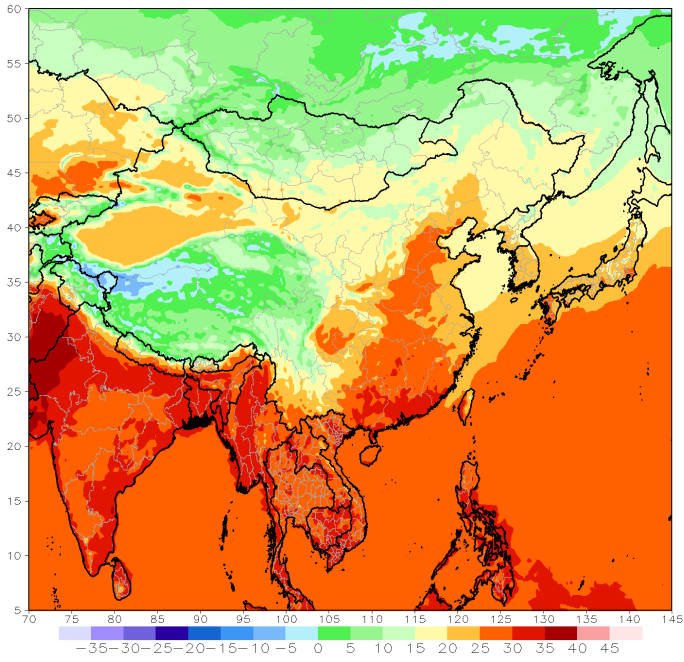
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



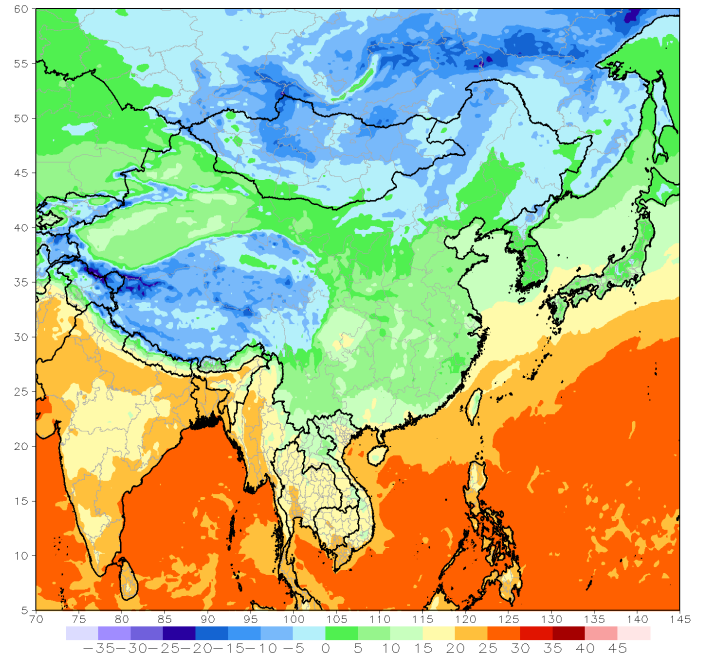
Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)
Period: 18z13Oct2022 - 18z19Oct2022



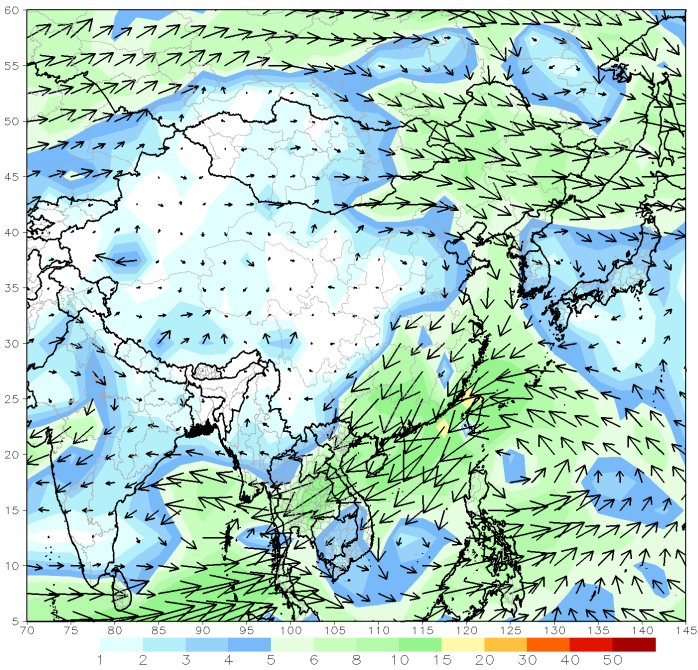
GFS week1 Temperature Min (C)
Period: 18z13Oct2022 - 18z19Oct2022



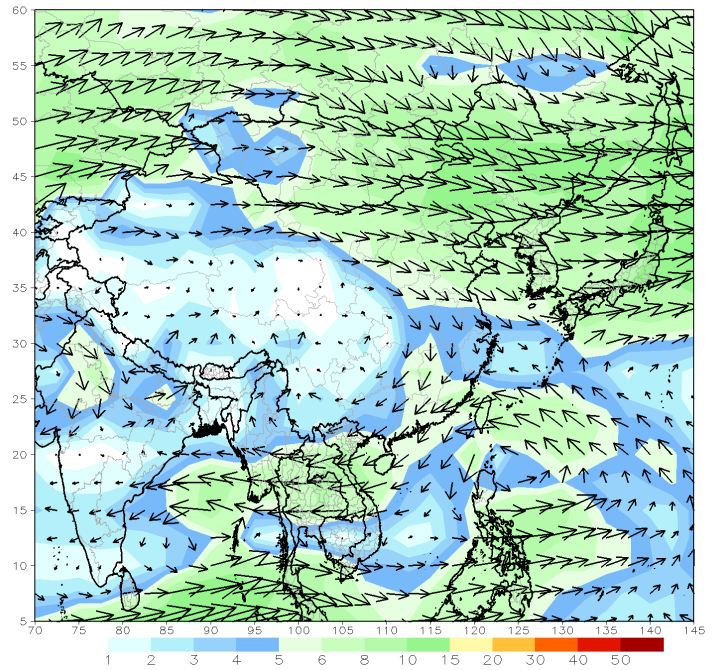
Weekly Wind Forecast

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: 18z13Oct2022 - 18z19Oct2022



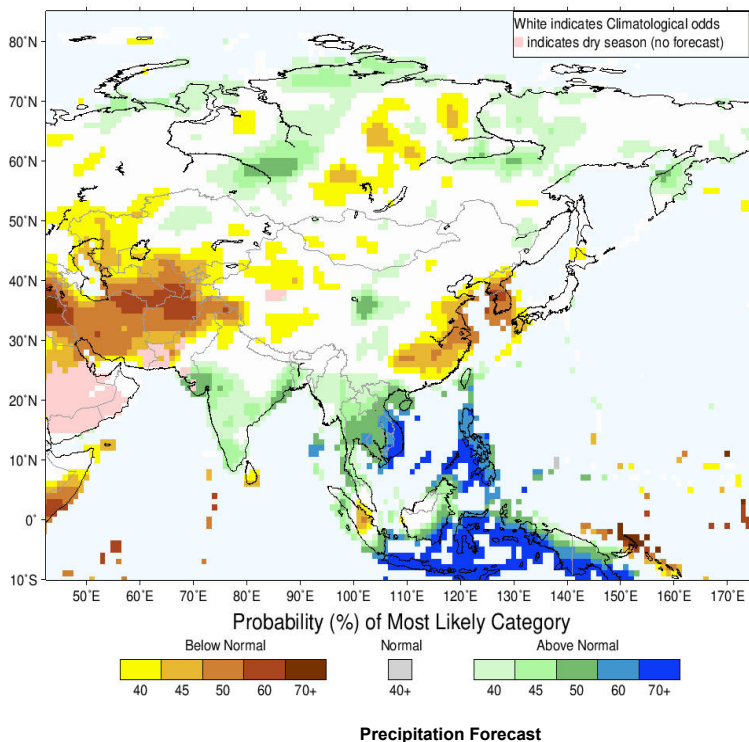
GFS 700mb week1 Mean Vector Wind Total (m/s)
Period: 18z13Oct2022 - 18z19Oct2022



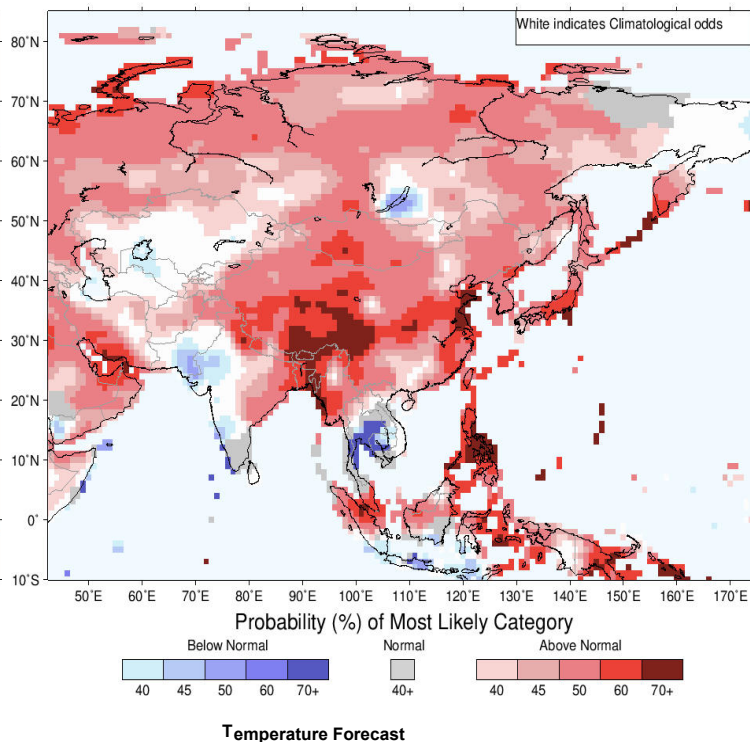
Seasonal Rainfall and Temperature Forecast

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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