28 OCTOBER 2022

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *Fairly heavy rainfall is predicted for the Western, Southern, Sabaragamuwa, North Central and Central provinces during 26th Oct - 1st Nov. During 2nd - 8th Nov heavy rainfall (> 100mm) is predicted for Sabaragamuwa, Southern and Western provinces.*

Monitored Rainfalls

- *Southwest of SL experienced very heavy rainfall (<250 mm) during the last week.The average daily rainfall over Sri Lanka was 13.2 mm & hydro catchment areas received 24.5 mm on average.*

Monitored Wind

- *From 17th -23rd Oct, up to 8m/s of north-westerly winds were experienced at 850 mb level over the island. During 27th Oct - 2nd Nov, north easterlies are expected to the north and north westerlies are expected to south of the country .*

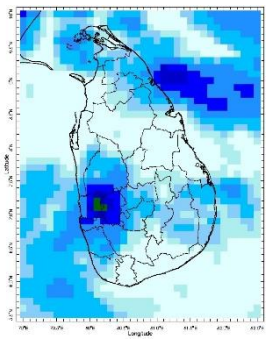
Monitored Sea & Land Temp

- *Sea surface temperature around Sri Lanka was above normal to the north of the country. Land surface temperature remained near normal.*

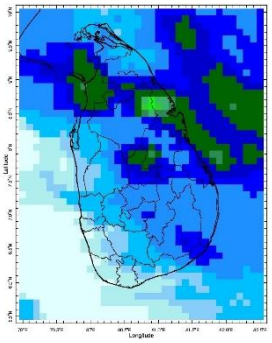
Monitoring

Rainfall

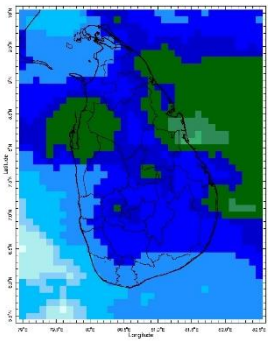
Daily Estimates for Rainfall from 18th October –25th October 2022



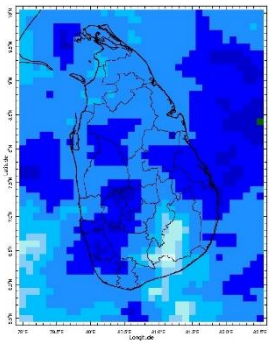
18 October



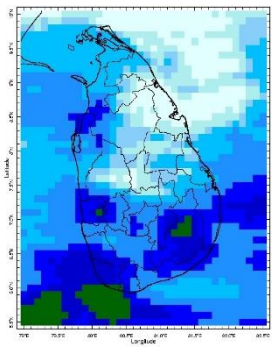
19 October



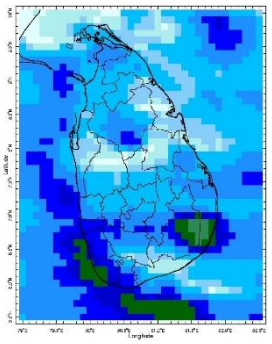
20 October



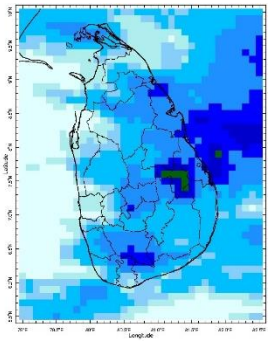
21 October



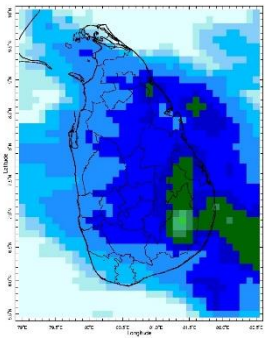
22 October



23 October



24 October



25 October

Federation for Environment, Climate & Technology

Federation for Environment, Climate and Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: October 24, 2022

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean late - October. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate La Niña is favored to continue through 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 North of the 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 26th October – 1st November:

Total rainfall by Provinces:

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

From 2nd November – 8th November:

Total rainfall by Provinces:

Rainfall	Provinces
135 mm	Sabaragamuwa
125 mm	Southern, Western
95 mm	Central
85 mm	North Western, Uva, Northern
75 mm	Eastern, North Central

MJO based OLR predictions

For the next 15 days:

MJO shall significantly suppress the rainfall during 26th– 30th October and slightly suppress the rainfall during 31st – 9th November for Sri Lanka.

Interpretation

Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (18th - 25th October) = 13.2 mm
Rmax: 169.7 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	11.8 mm
Eastern	7.2 mm
Western	22.8 mm
Southern Plains	0.8 mm

The Hydro Catchment Areas recorded 24.5 mm of average rainfall for the last week
Rmax: 105.3 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 below normal for the North Western, North Central provinces and some parts of the Western and Eastern provinces, driven by the warm SST's.

Predictions

Rainfall: During the next week (26th October – 1st November) fairly heavy rainfall (85 mm) is predicted for the Western, Sabaragamuwa and Southern provinces; and below 55 mm of rainfall is expected for the rest of the country.

Temperatures: The temperature will remain above normal to the whole country during 27th October– 2nd November.

Teleconnections: La Niña is favored to continue through the Northern Hemisphere winter (December-February) 2022-23, with a 54% chance for ENSO-neutral in February-April 2023.

MJO shall significantly suppress the rainfall during 26th– 30th October and slightly suppress the rainfall during 31st – 9th 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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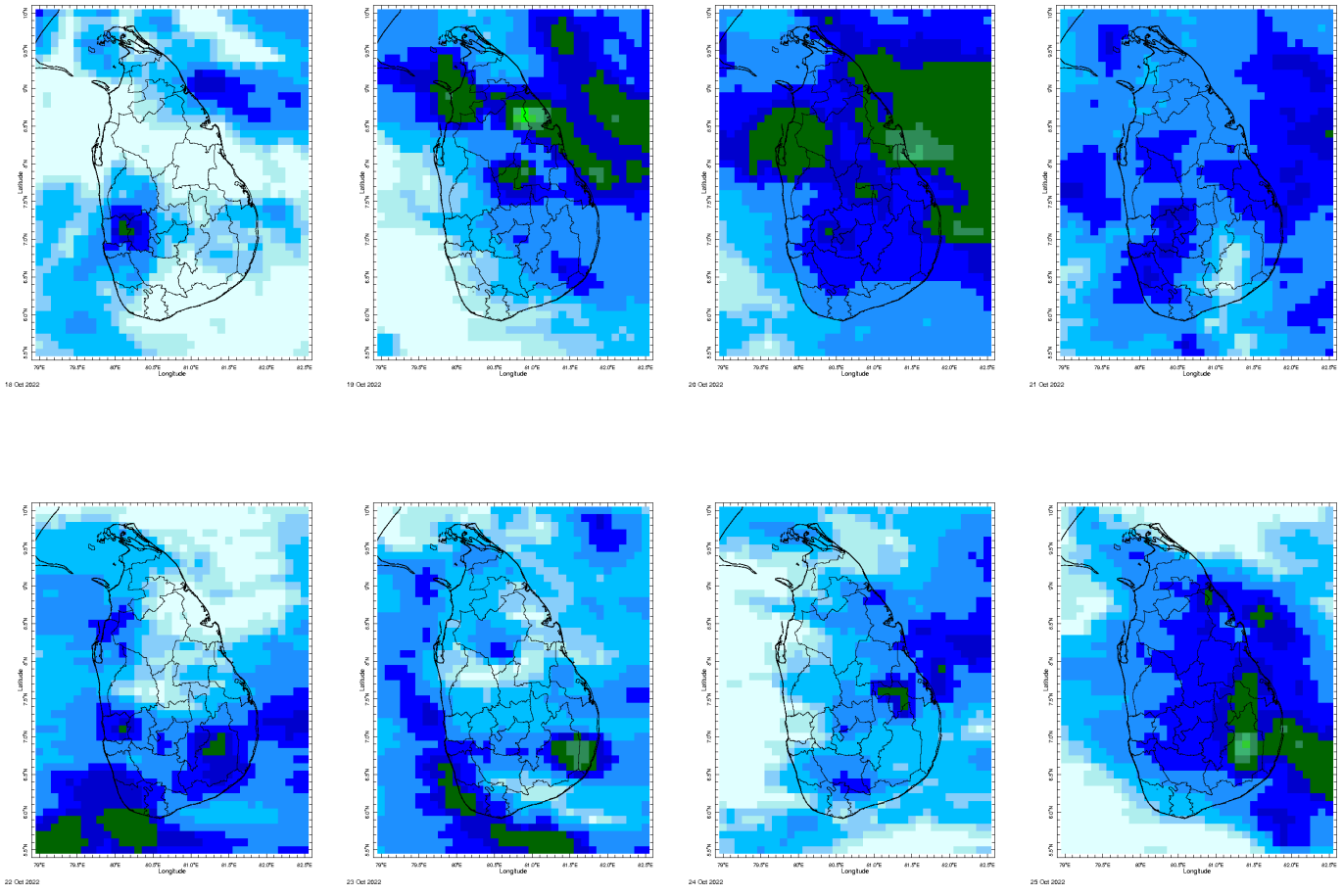
MONITORING

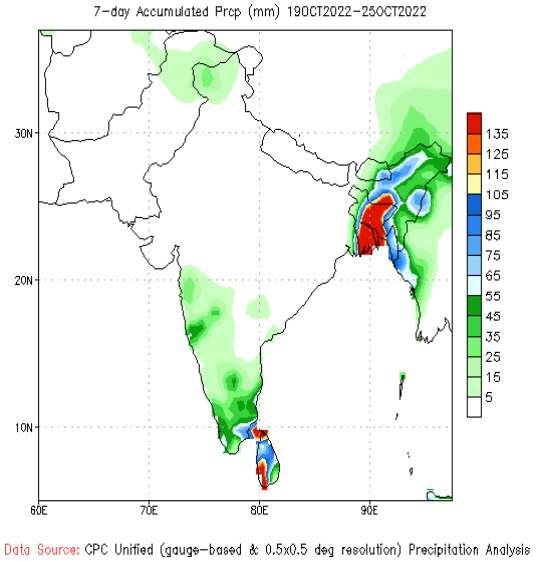
Daily Rainfall Monitoring

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

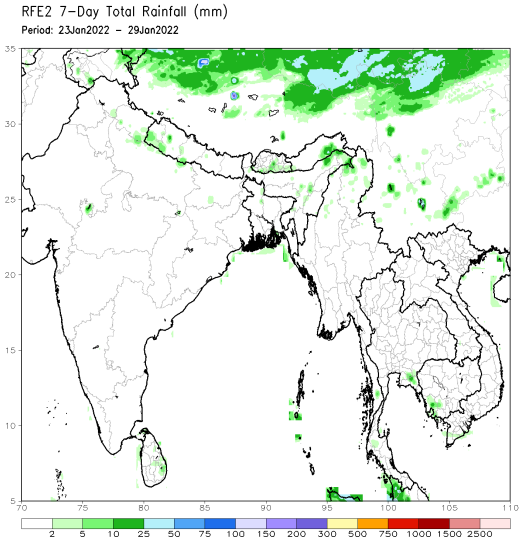


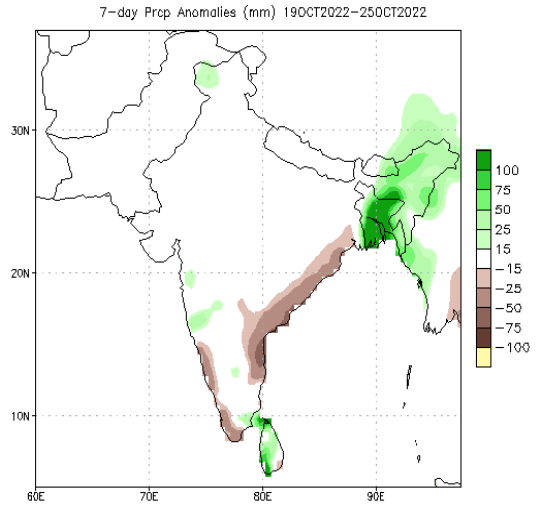
Weekly Rainfall Monitoring

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.

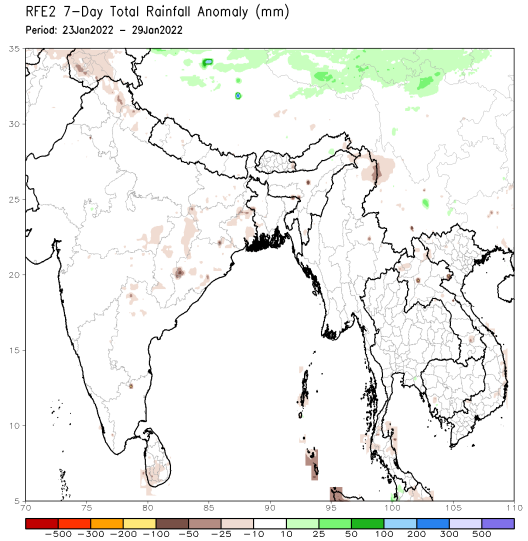


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



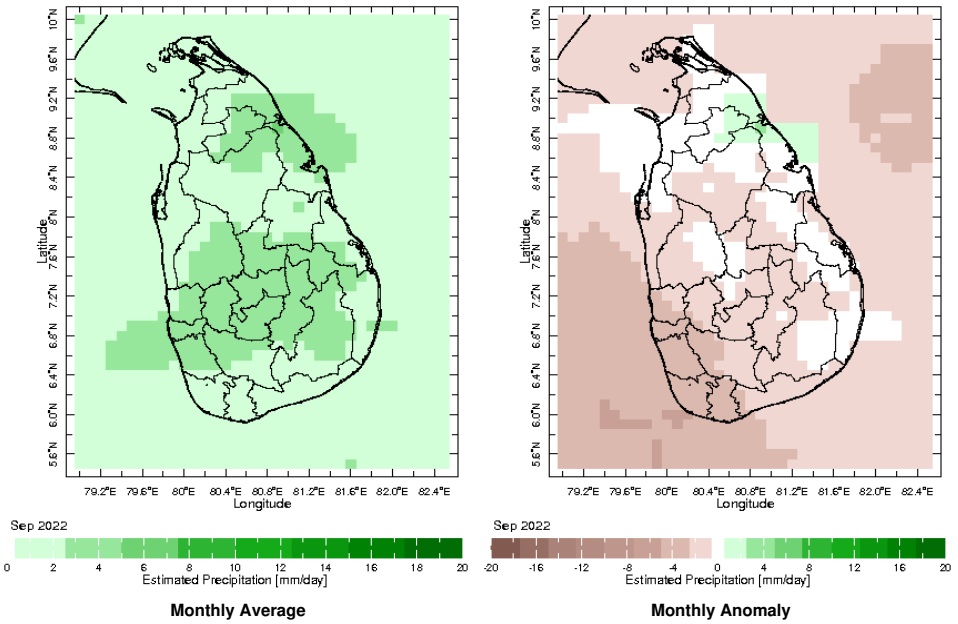


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1991-2020)



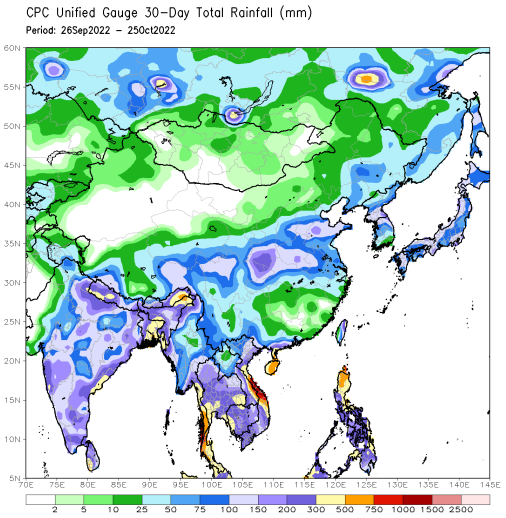
Monthly Rainfall Monitoring

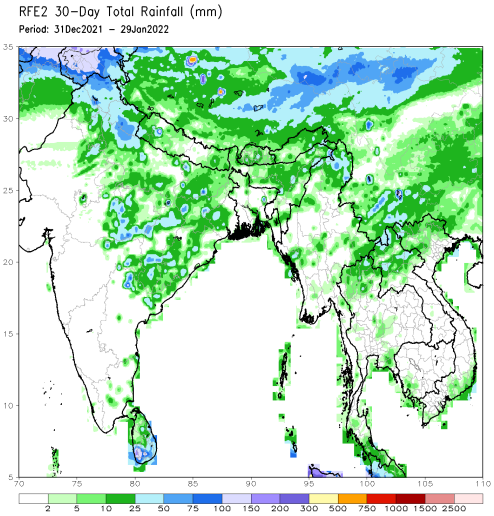
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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

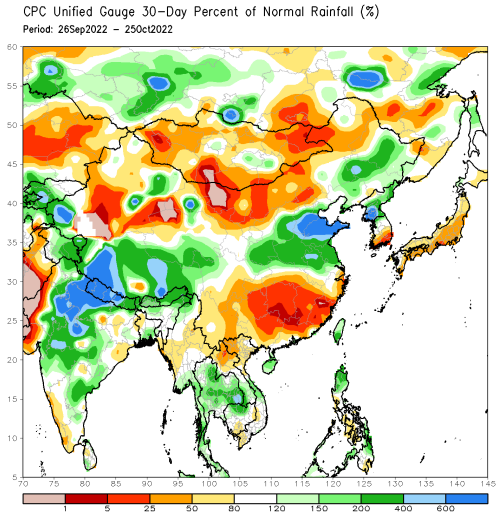


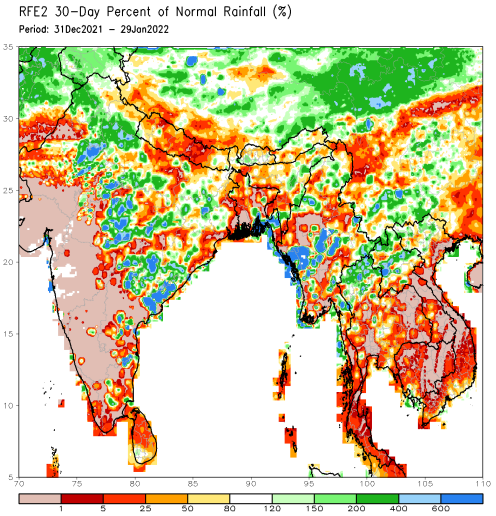
Monthly Average **Monthly Anomaly**

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.

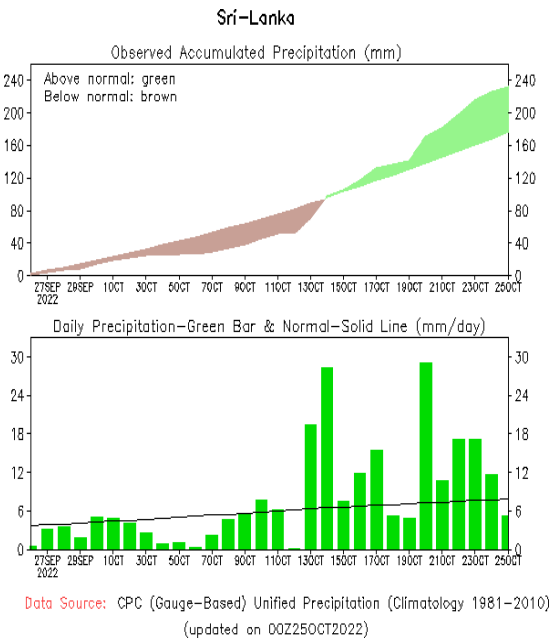




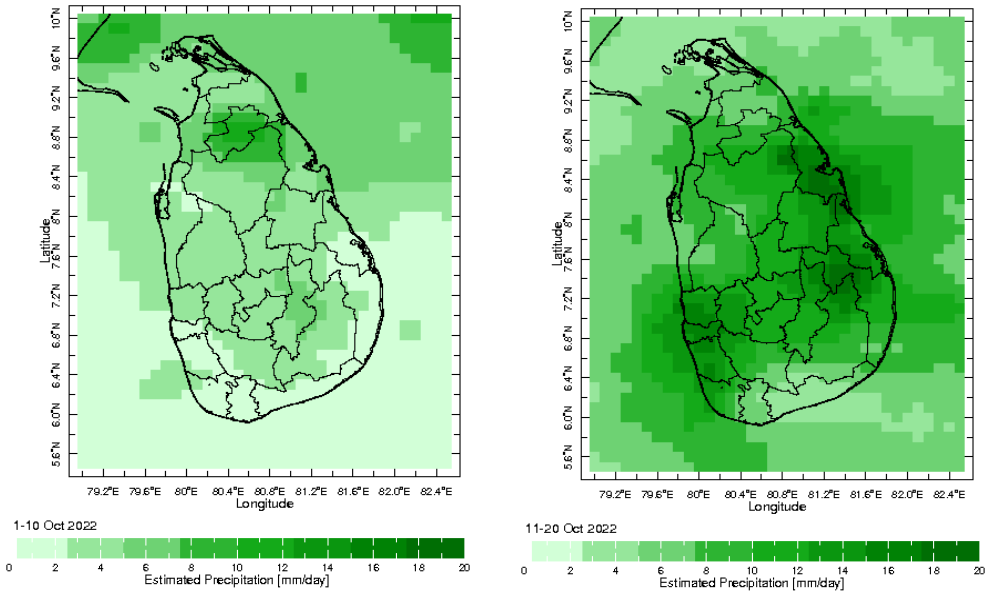




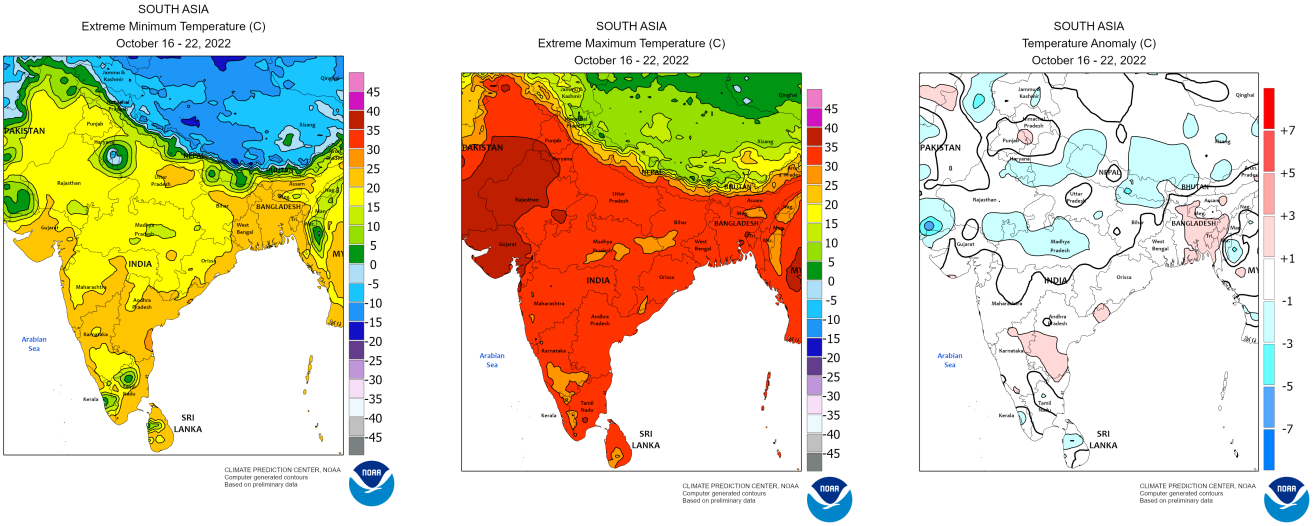
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

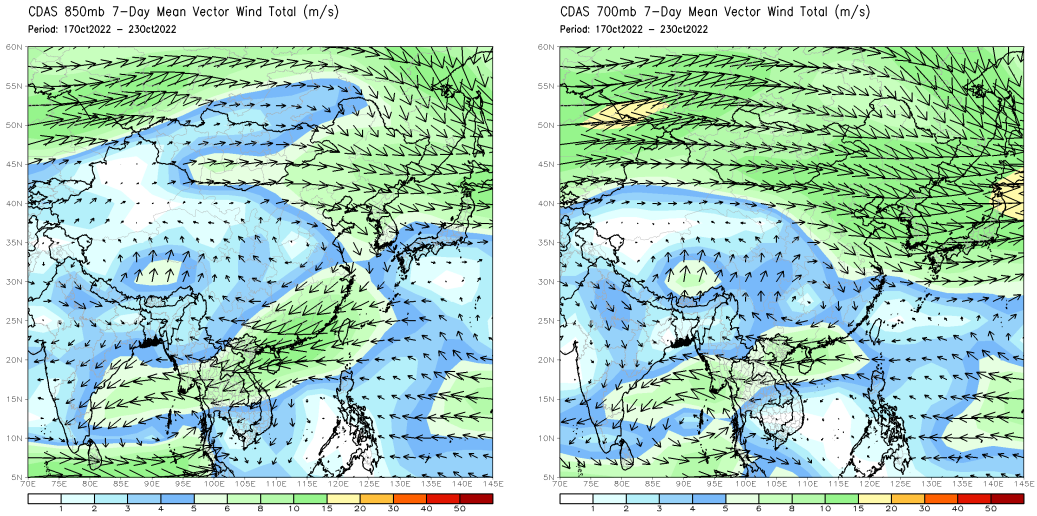


Weekly Temperature Monitoring



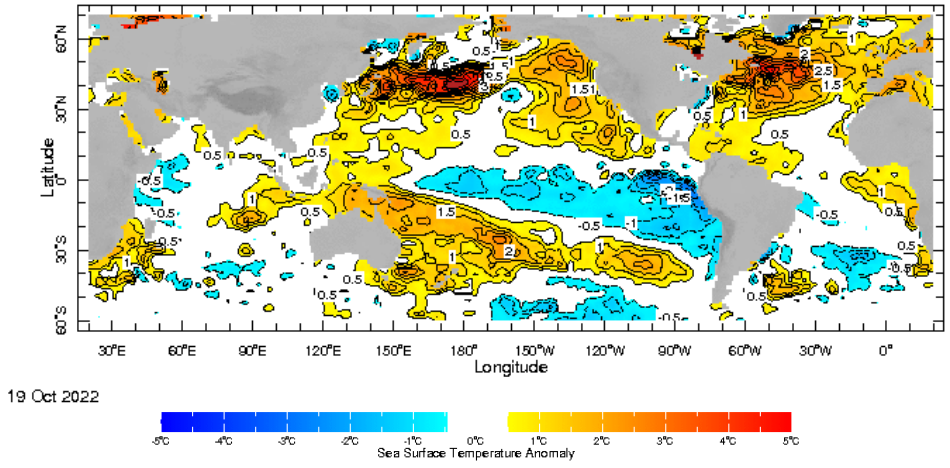
Weekly Wind Monitoring

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.



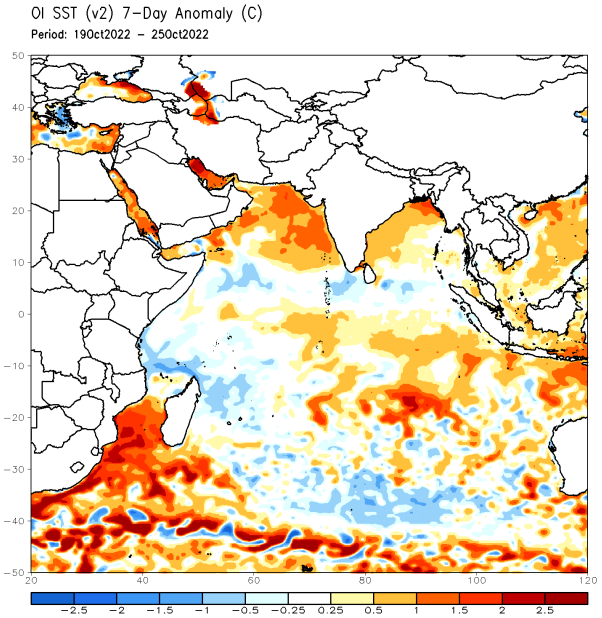
Weekly Average SST Anomalies

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

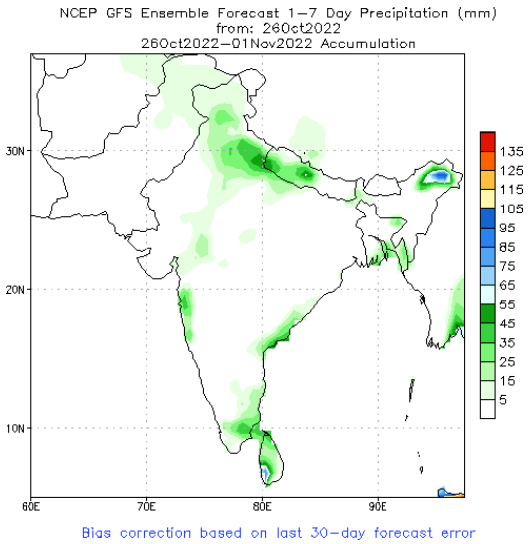


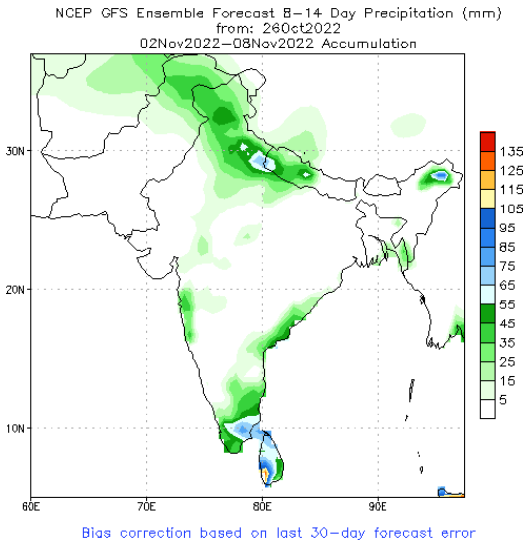
WORLDBATH topography

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

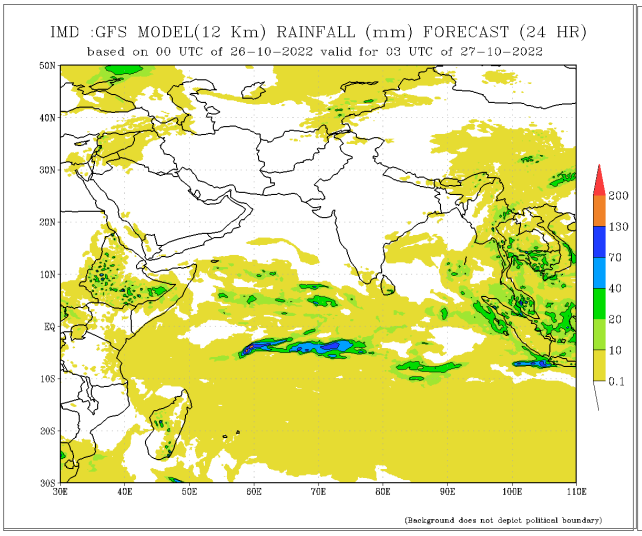


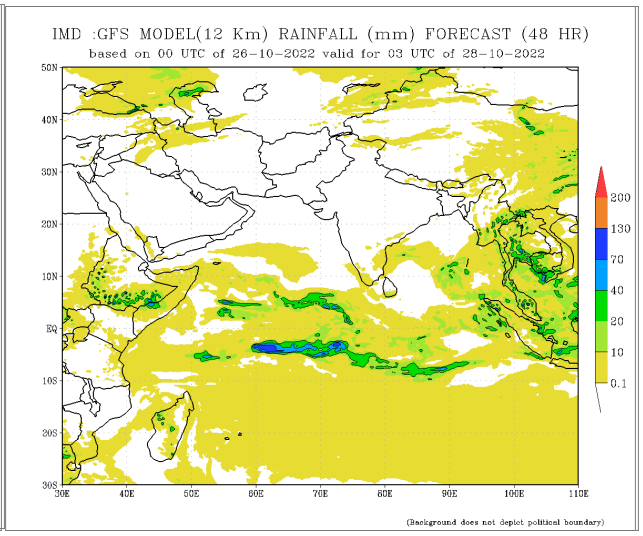
NCEP GFS 1- 14 Day prediction

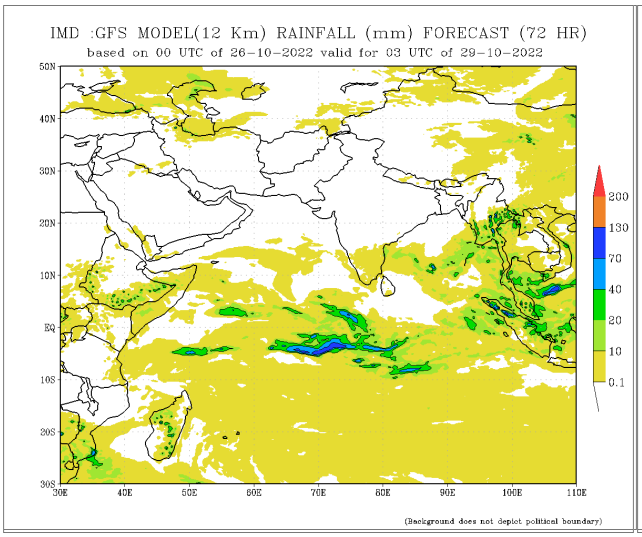


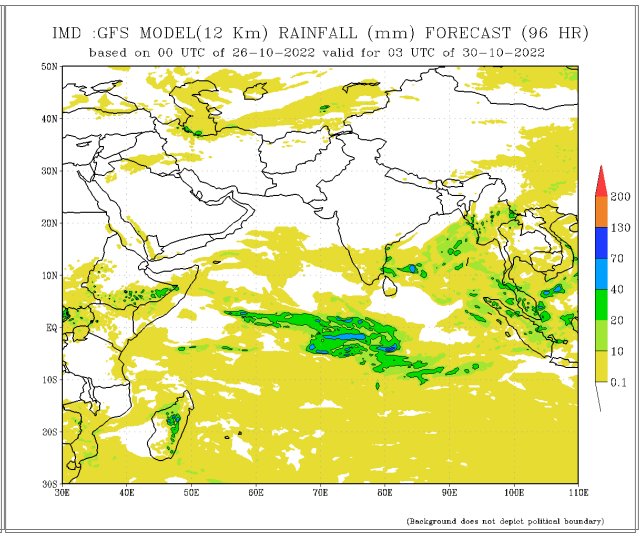


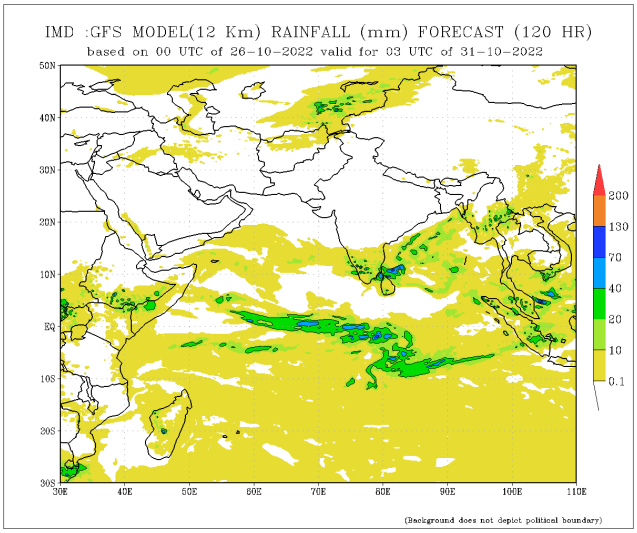
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

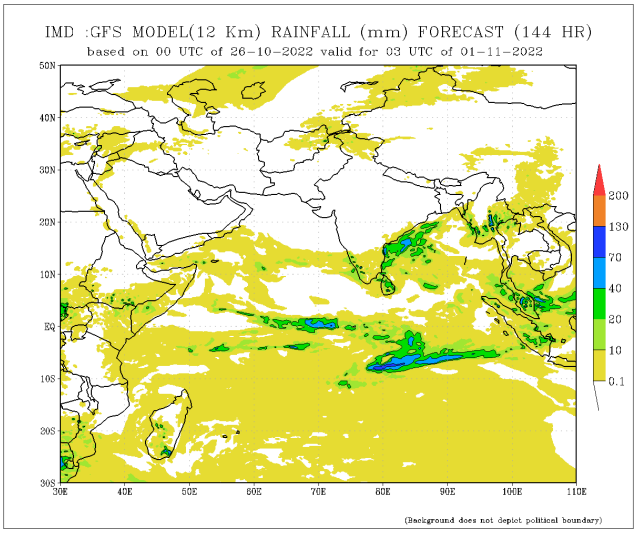


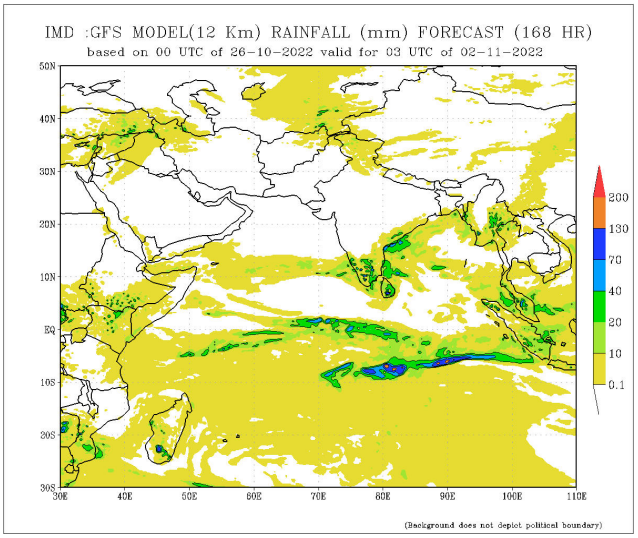






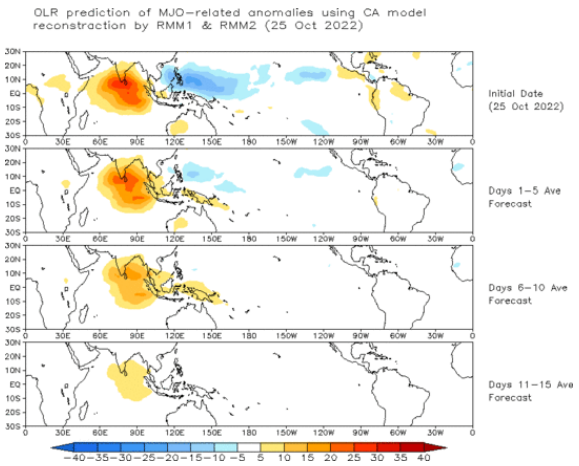






Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

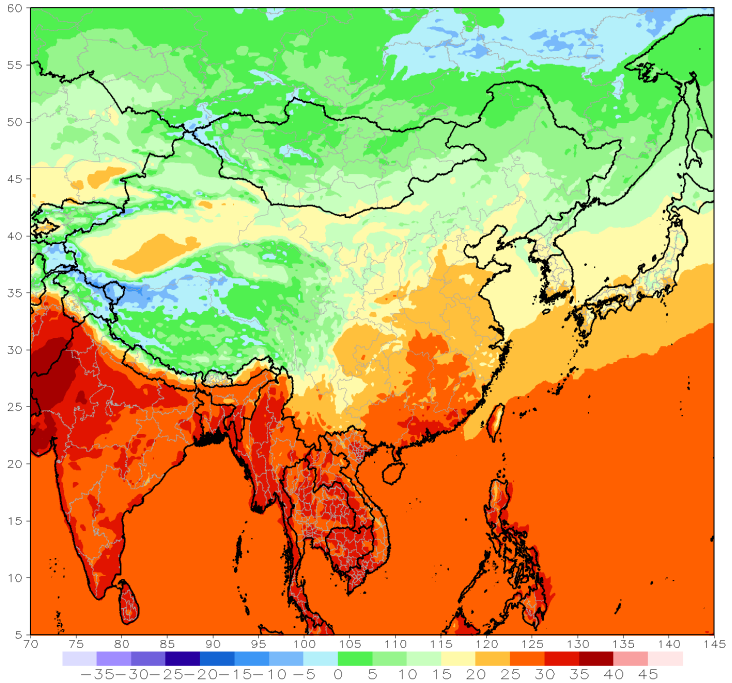
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



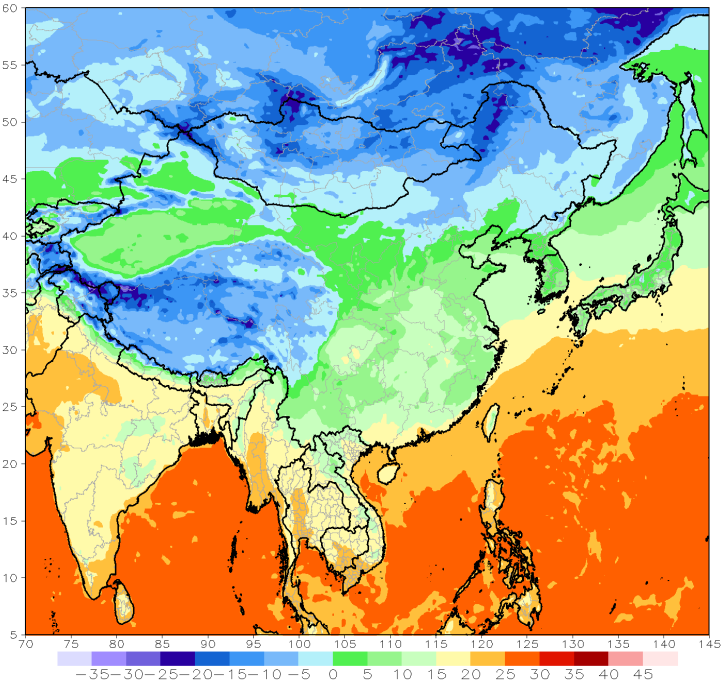
Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)
Period: 18z27Oct2022 – 18z02Nov2022



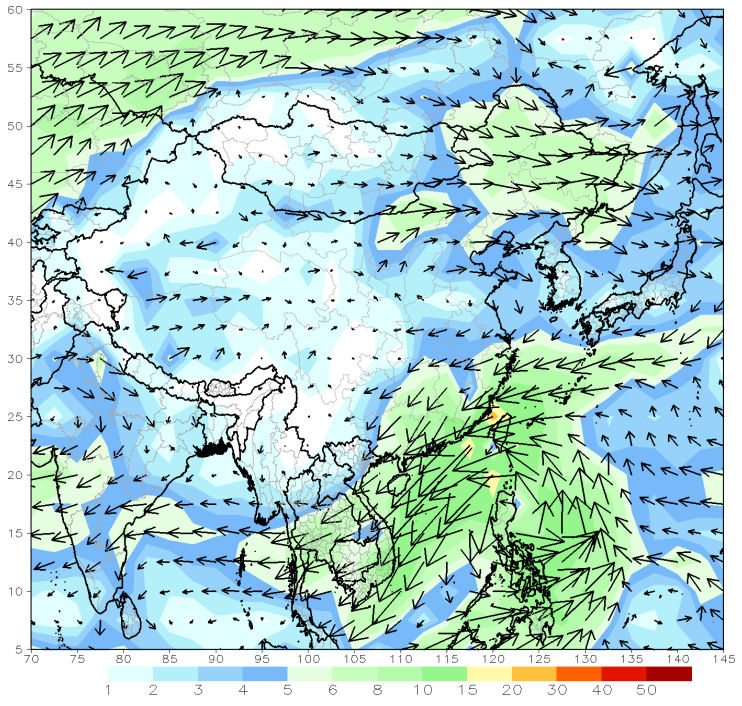
GFS week1 Temperature Min (C)
Period: 18z27Oct2022 – 18z02Nov2022



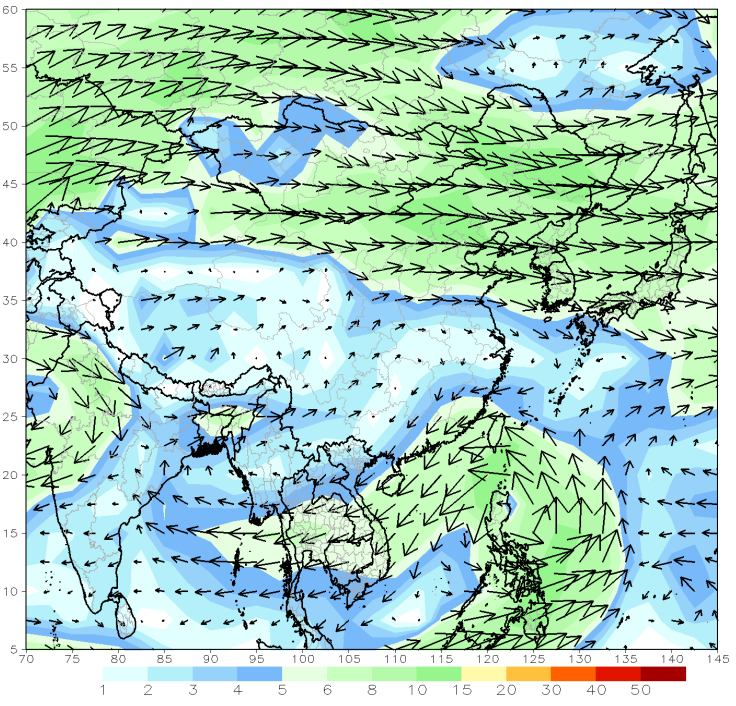
Weekly Wind Forecast

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: 18z27Oct2022 – 18z02Nov2022

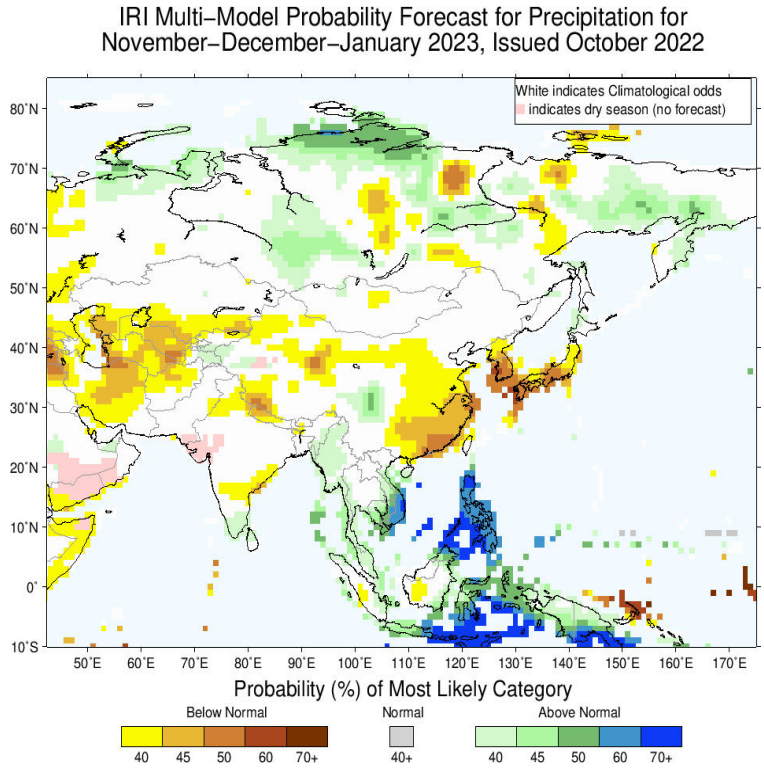


GFS 700mb week1 Mean Vector Wind Total (m/s)
Period: 18z27Oct2022 – 18z02Nov2022

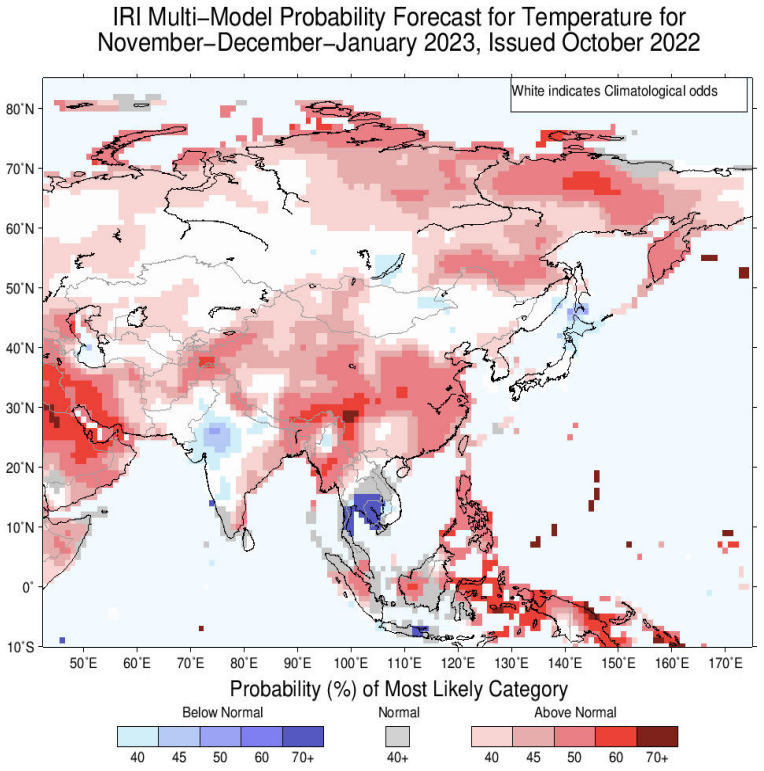


Seasonal Rainfall and Temperature Forecast

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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