Week of
17 Dec - 24 Dec
2021

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *Fairly heavy rainfall is predicted for Eastern, Uva, North Central, Northern,and Southern provinces from 18th Dec – 22nd Dec. Highest rainfall for the period is predicted for Jaffna on the 18th Dec.*

Monitored Rainfalls

- *Very heavy rainfall was experienced in Western and Uva provinces with max of 179 mm in Badulla district on 12th Dec.*

Monitored Wind

- *From 8th Dec - 15th Dec, up to 45 km/h Northeasterlies were experienced across the island.*

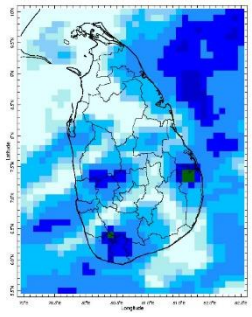
Monitored Sea Surface

- *Sea surface temperatures were above 1^{0}C around the entire island.*

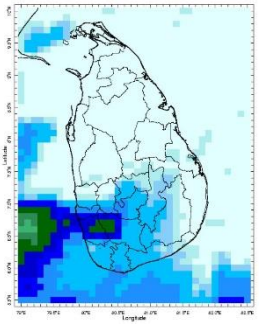
Monitoring

Rainfall

Daily Estimates for Rainfall from 8th December – 15th December



8 December



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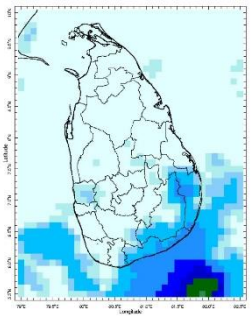
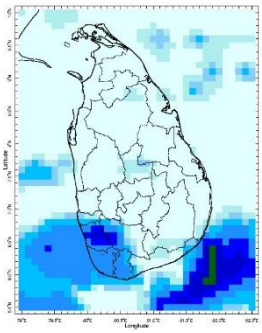
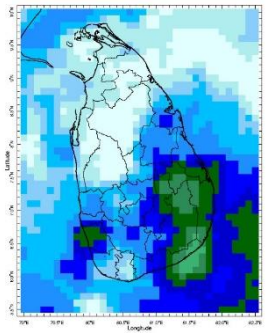


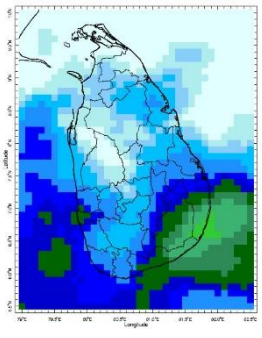
10 December



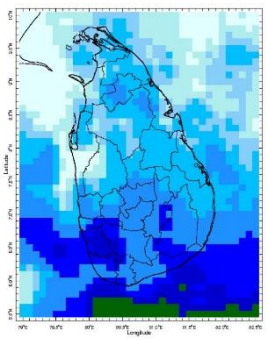
11 December



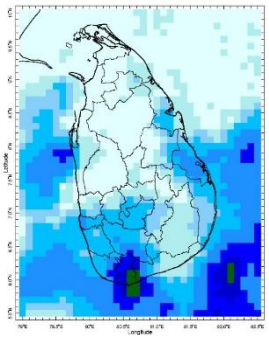
12 December



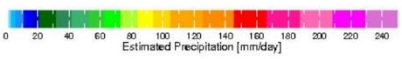
13 December



14 December



15 December



Federation for Environment, Climate & Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: December 8, 2021

Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean in the early-December. The tropical Pacific atmosphere is consistent with La Niña conditions. A large majority of the model forecasts indicates very high probabilities of La Niña during the Northern Hemisphere winter, weakening gradually, and likely to dissipate in Mar-May 2022.

Indian Ocean State

Sea surface temperatures were above 1^0C around the entire island.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 16th December – 22nd December:

Total rainfall by Provinces:

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

From 23rd December – 29th December:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall be active during 18th December – 30th December giving severely suppressed rainfall from 18th December – 25th December and significantly suppressed rainfall from 26th December – 30th December for the entire island.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been heavy rainfall over the following provinces: Western and Uva.

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

Temperatures: The temperature anomalies were neutral for some parts of Southern, Uva and Eastern provinces while 1^0C-3^0C above neutral for the rest of the island last week, driven by the warm SST's.

Predictions

Rainfall: During the next week (18th December – 22nd December) fairly heavy rainfall is predicted for Eastern, Uva, North Central, Northern, Southern provinces.

Temperatures: The temperature remains normal during 18th December – 26th December for the entire island.

Teleconnections:

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

MJO shall be active during 18th December – 30th December giving severely suppressed rainfall from 18th December – 25th December and significantly suppressed rainfall from 26th December – 30th December for the entire island.

Seasonal Precipitation:

The precipitation forecast for the Jan-Feb-Mar 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, [1] International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.

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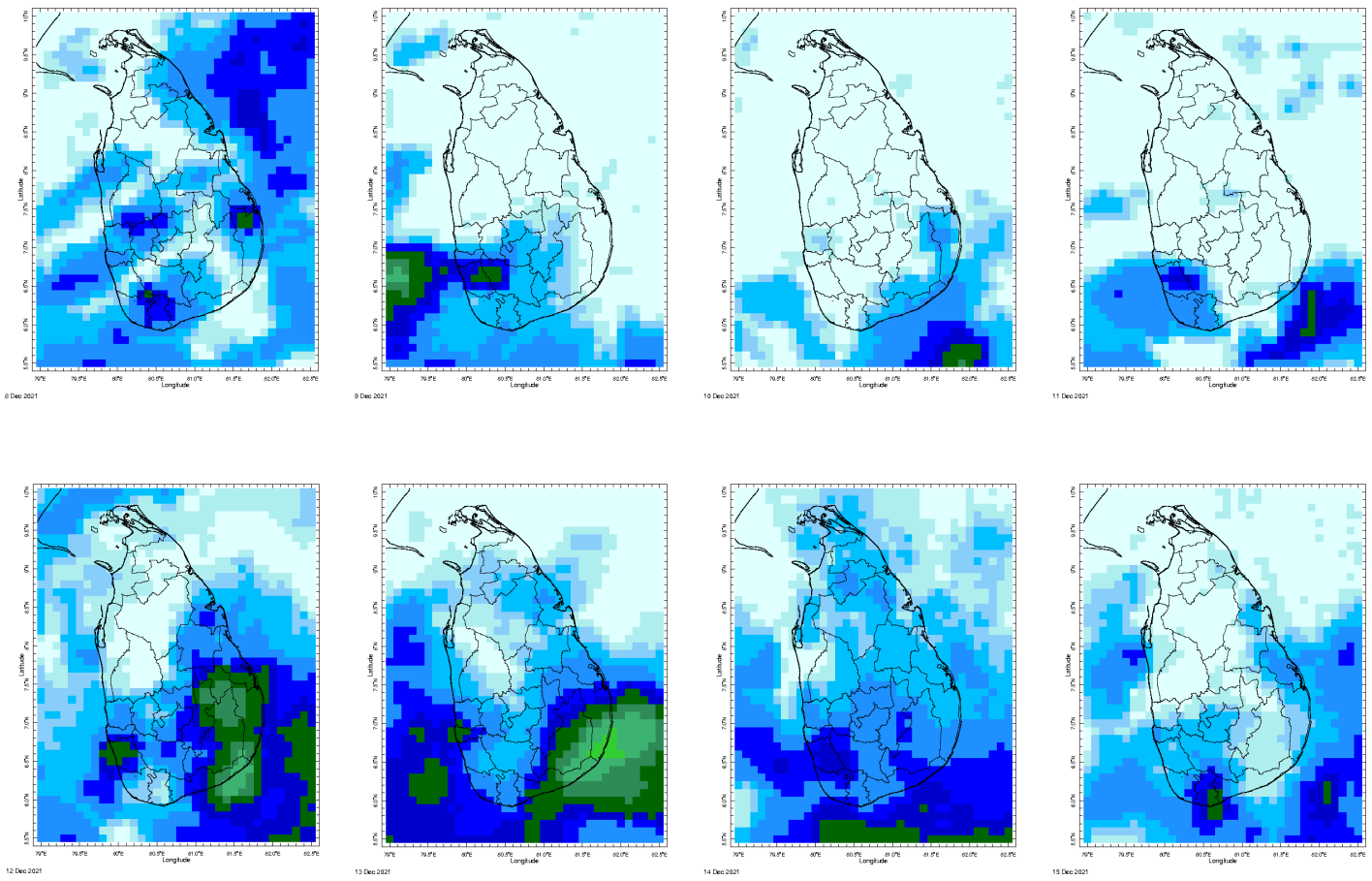
Weekly Climate Bulletin for Sri Lanka

Inside This Issue

MONITORING

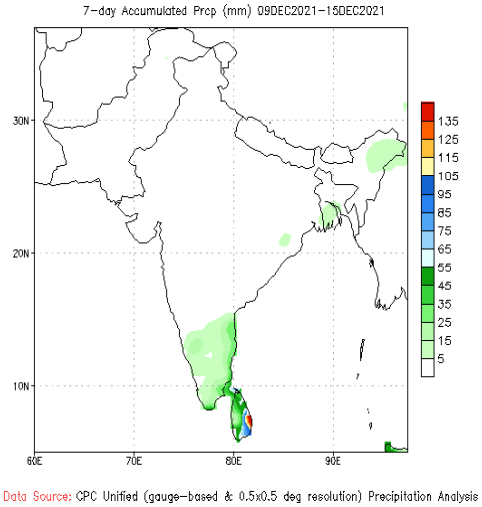
Daily Rainfall Monitoring

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

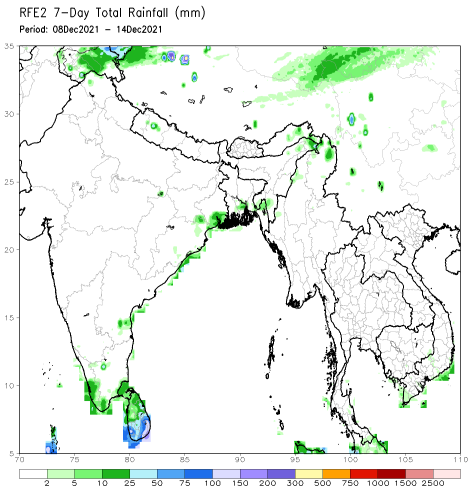


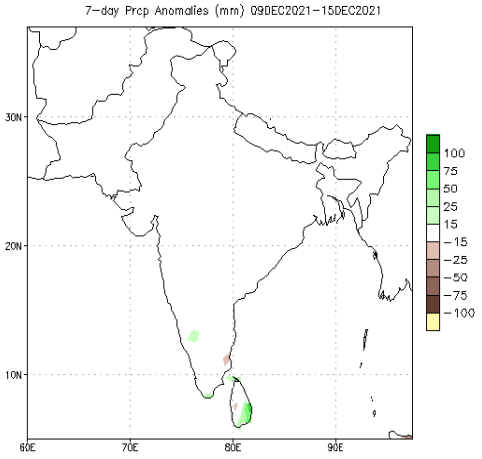
Weekly Rainfall Monitoring

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.

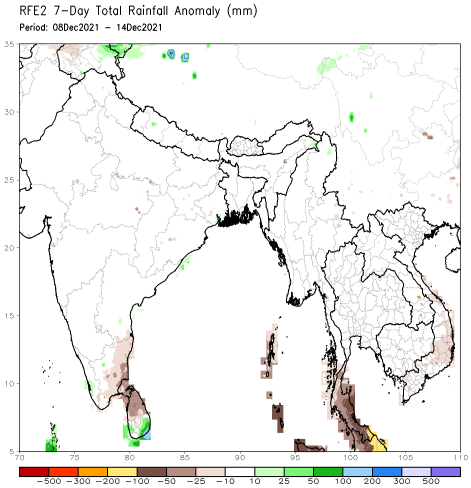


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



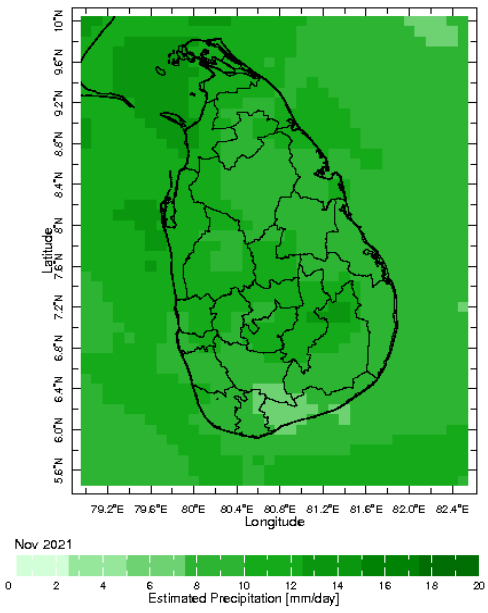


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

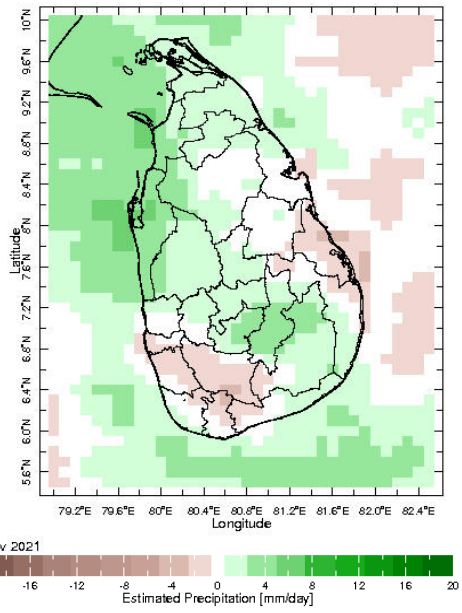


Monthly Rainfall Monitoring

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

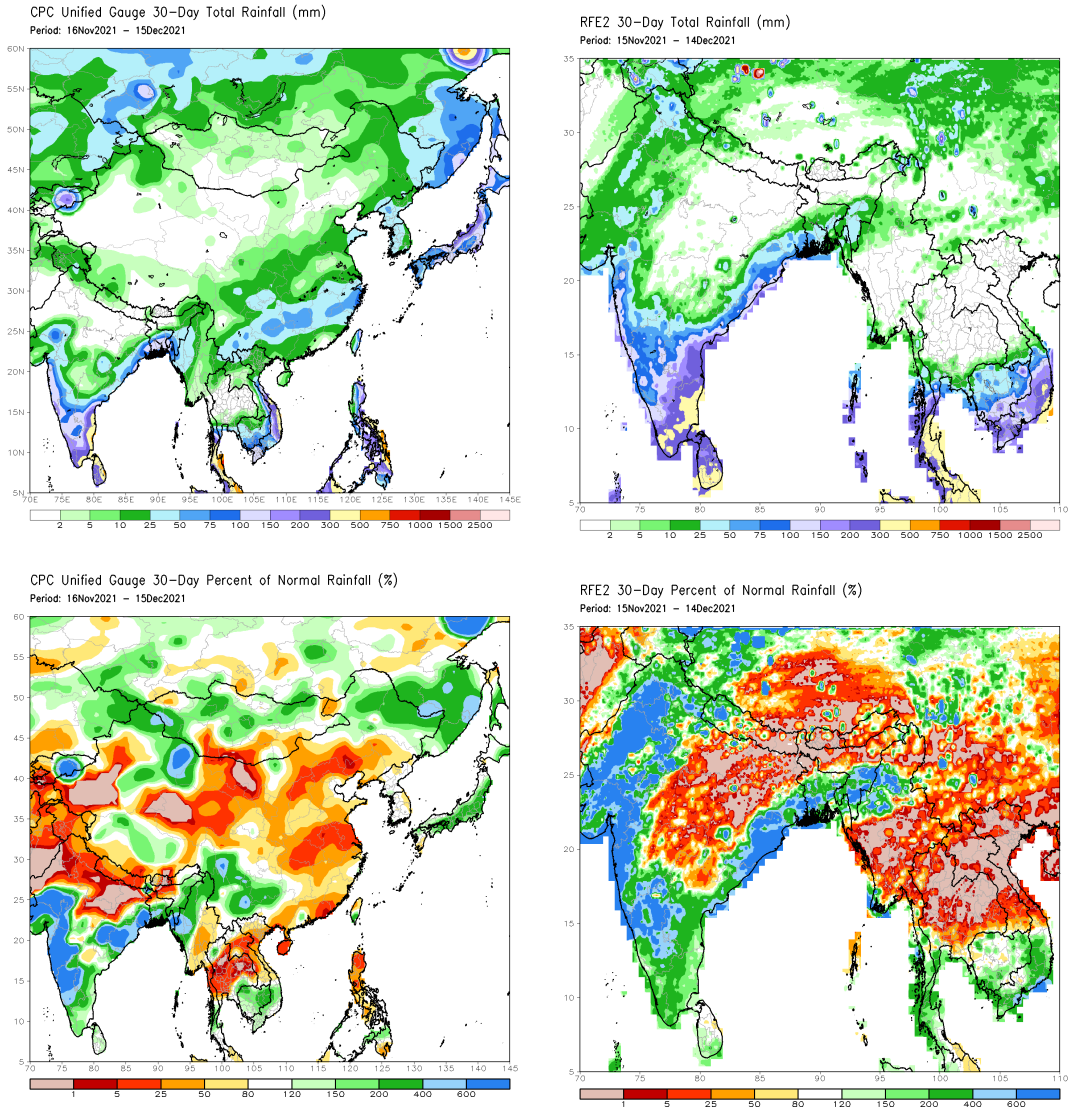


Monthly Average

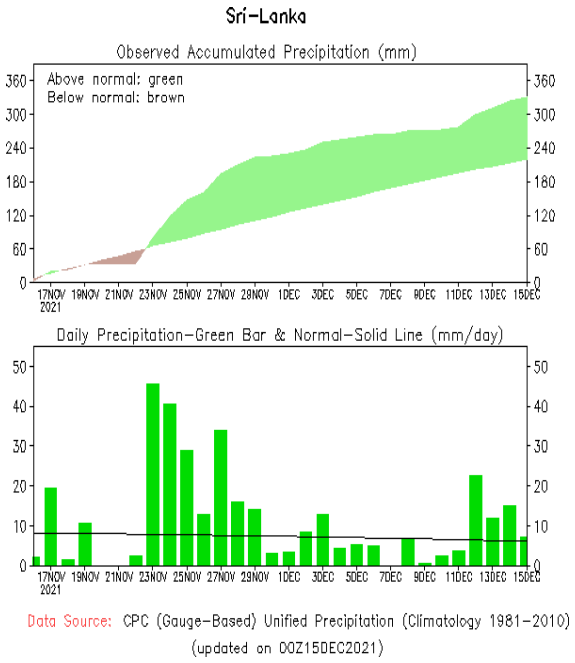


Monthly Anomaly

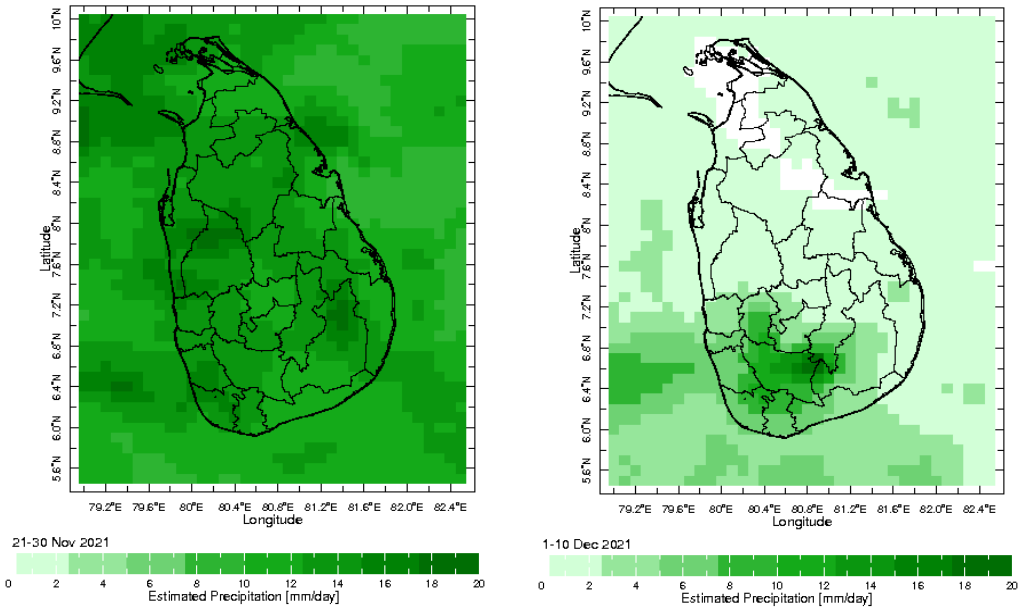
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



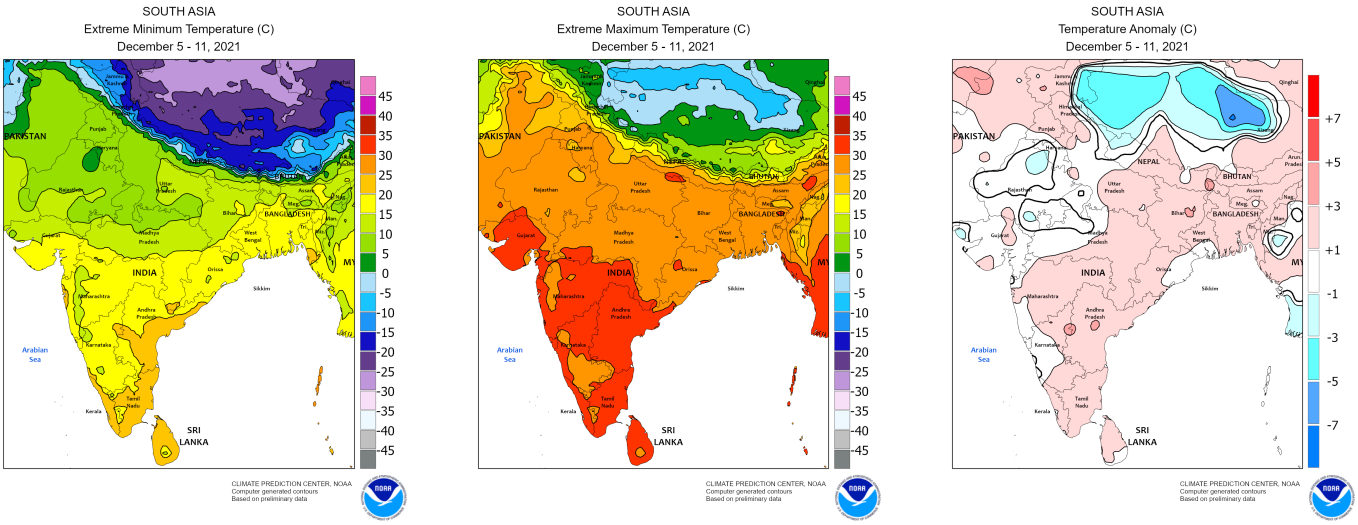
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

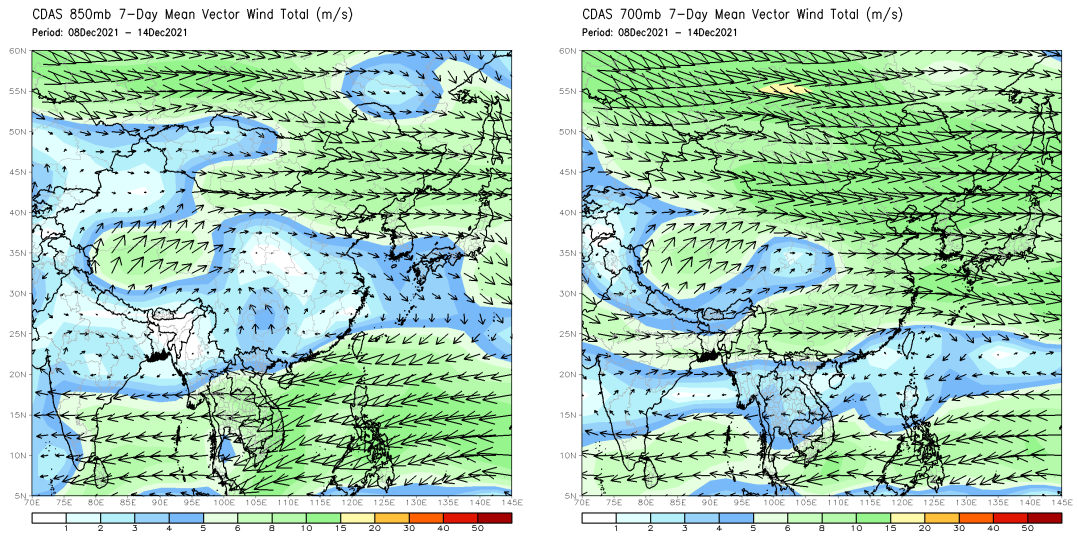


Weekly Temperature Monitoring



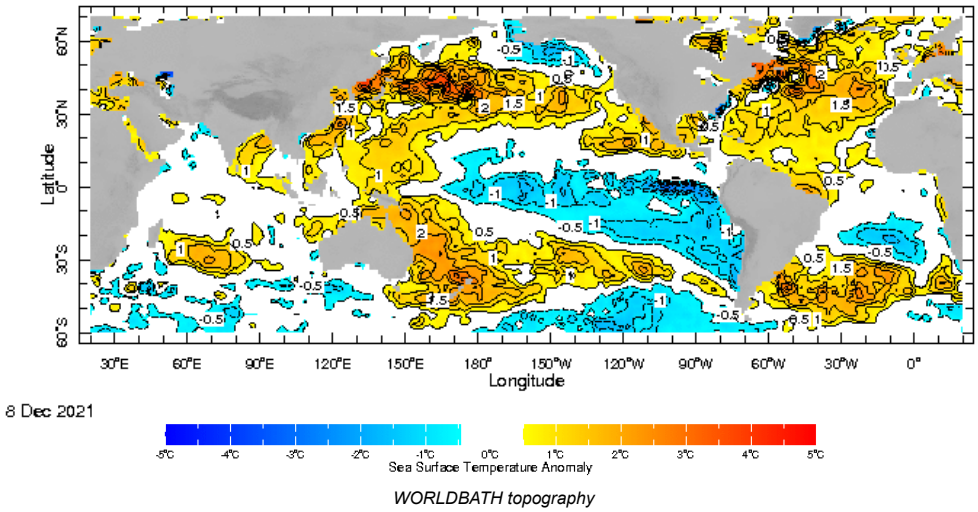
Weekly Wind Monitoring

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.

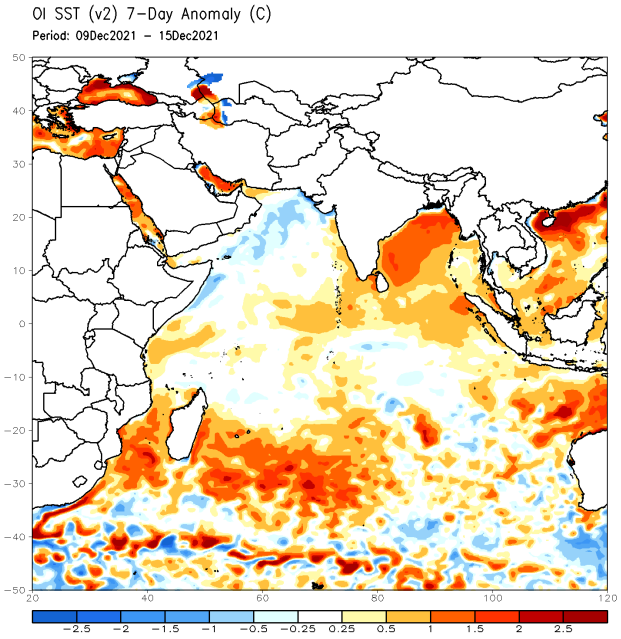


Weekly Average SST Anomalies

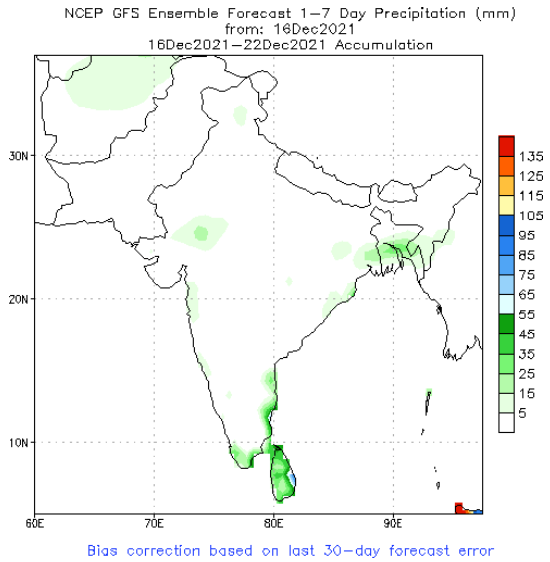
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

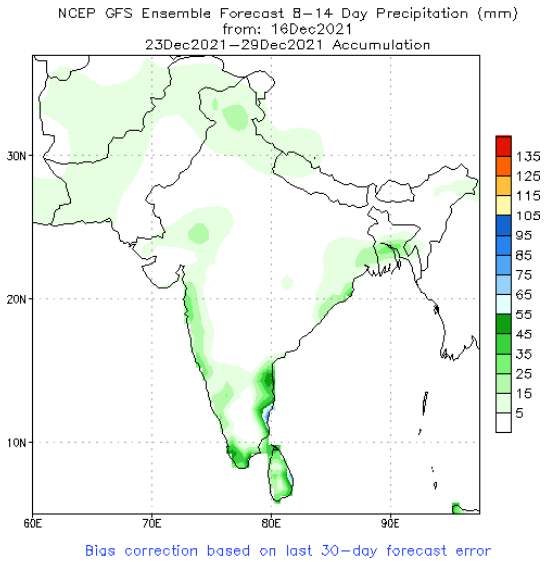


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

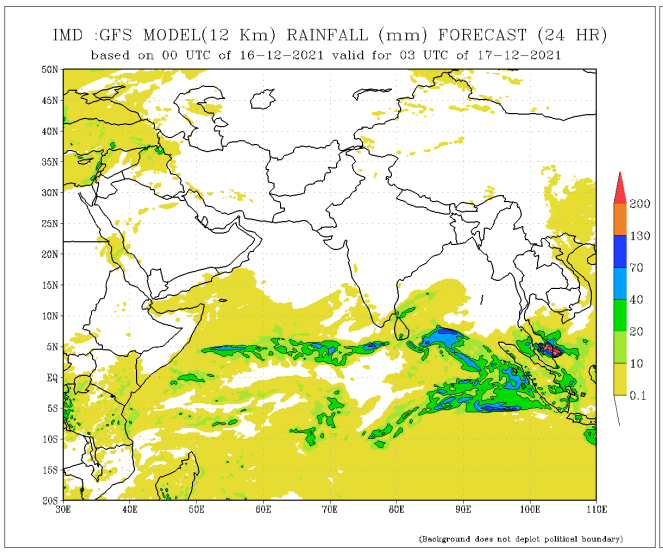


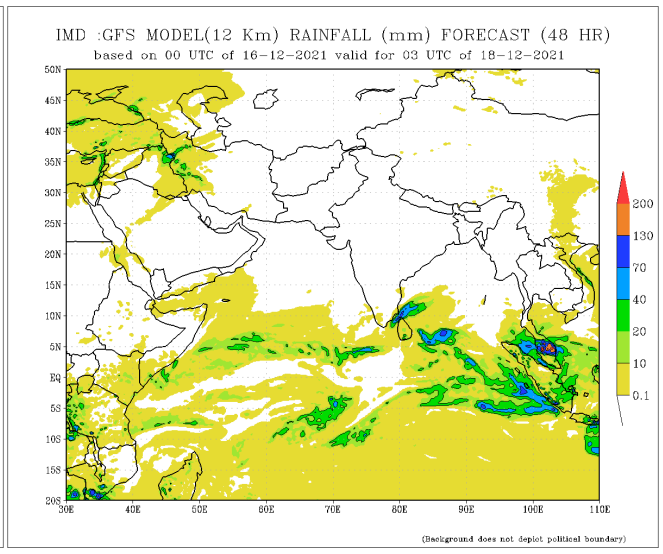
NCEP GFS 1- 14 Day prediction

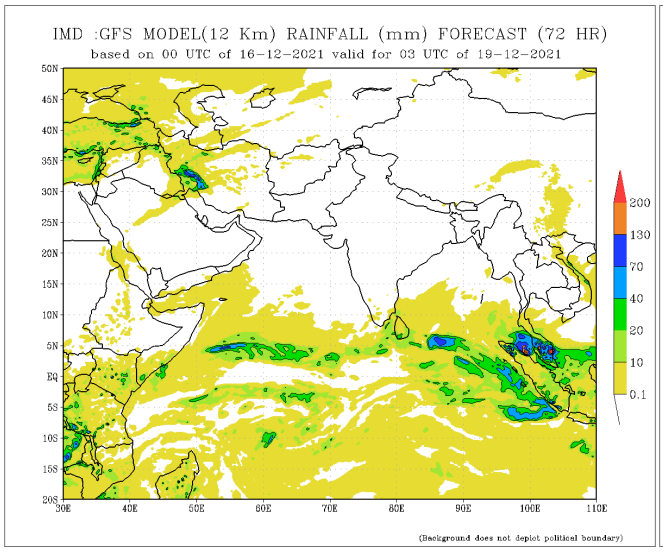


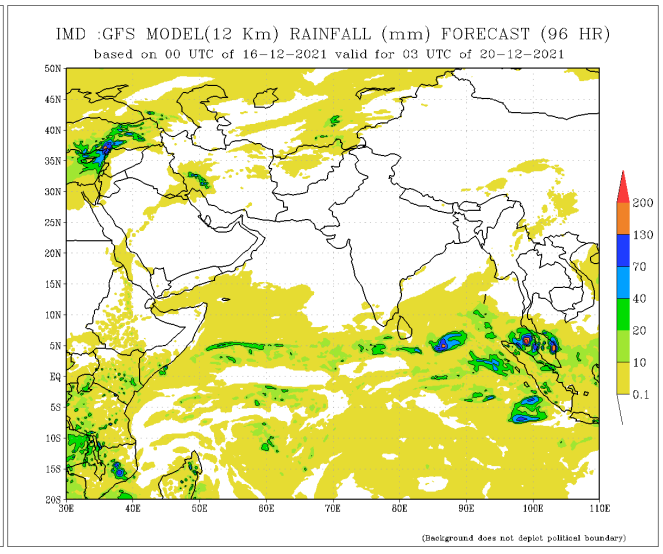


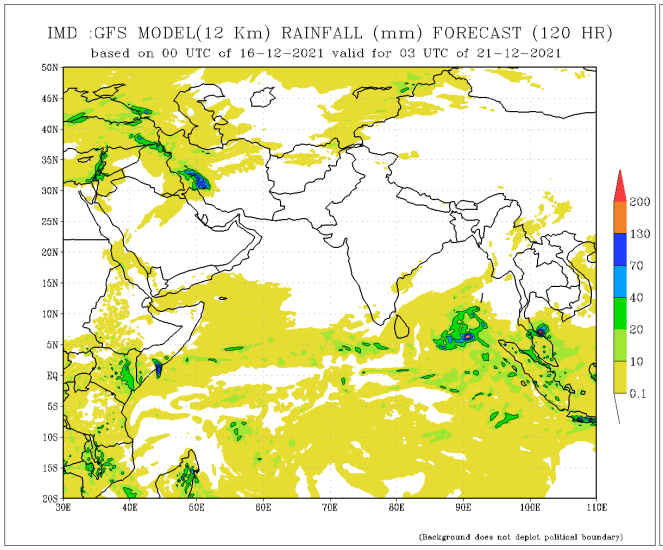
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

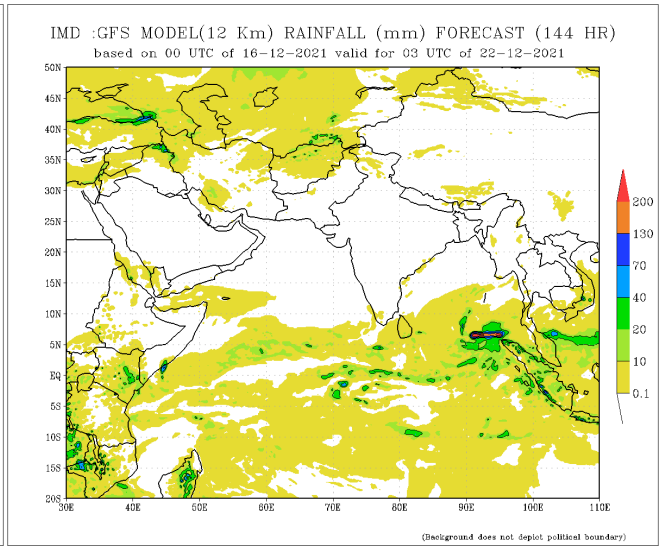


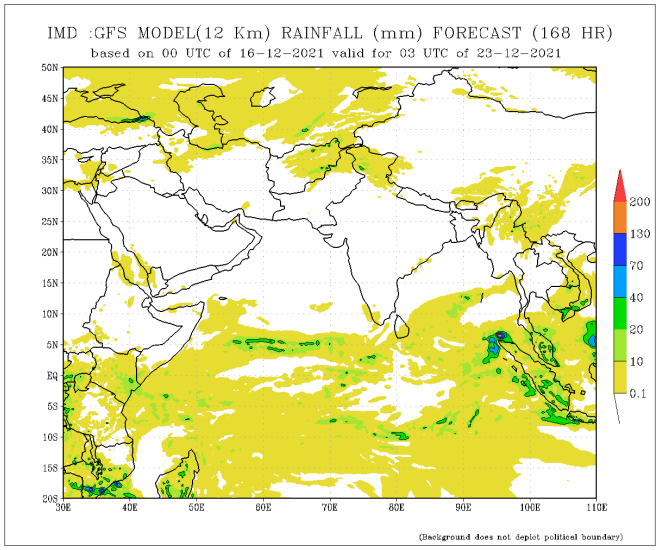






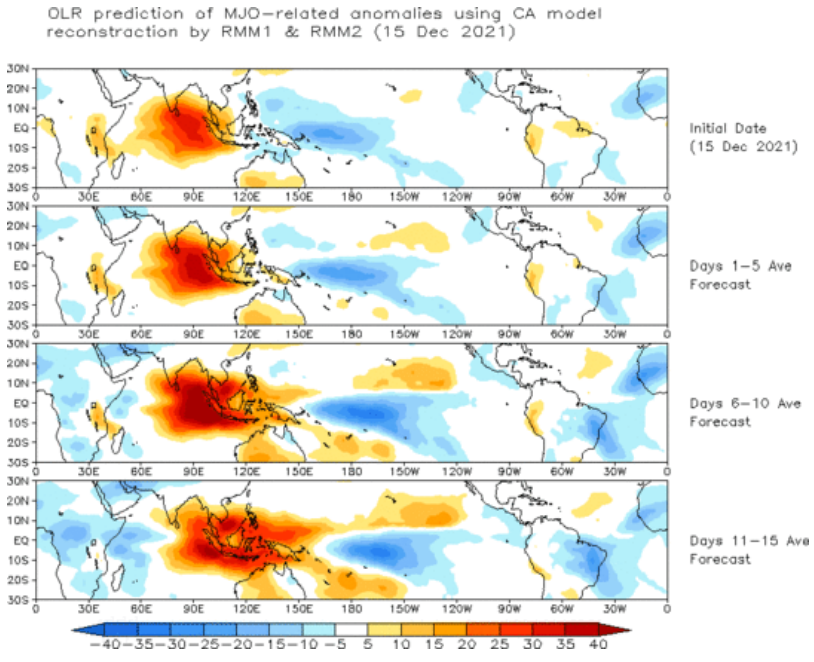






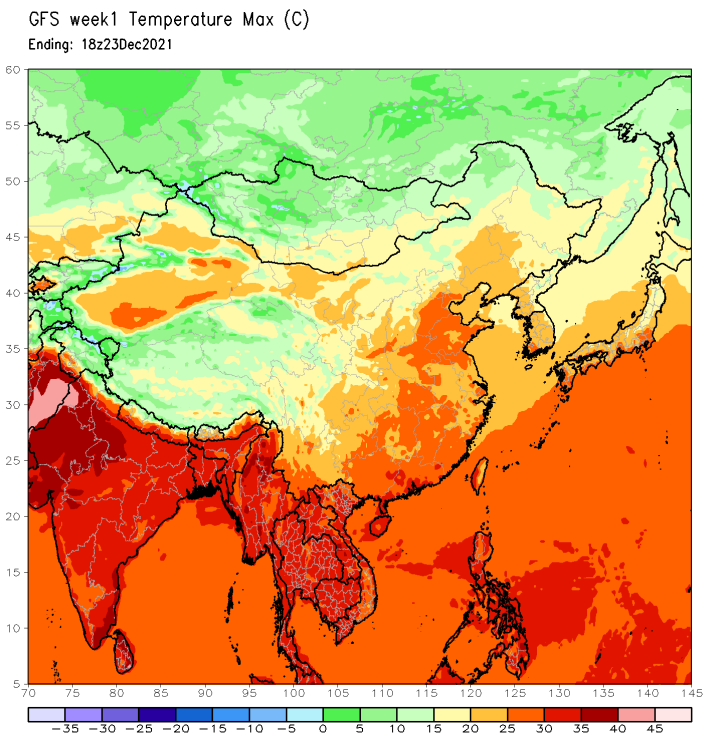
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

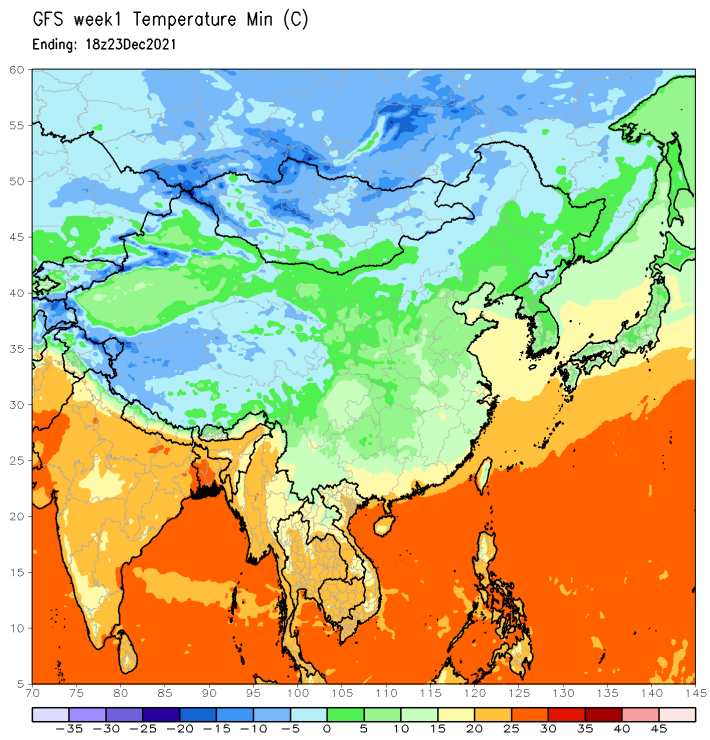
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



Weekly Temperature Forecast

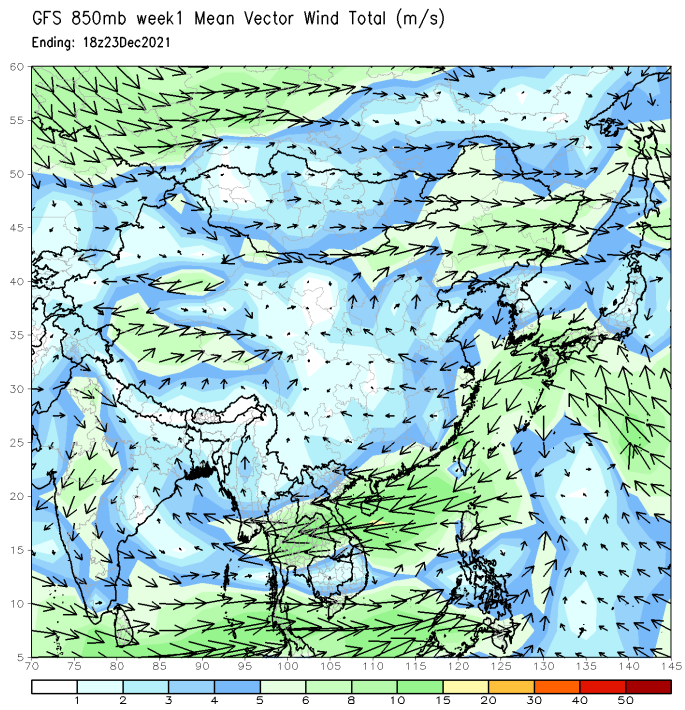
Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

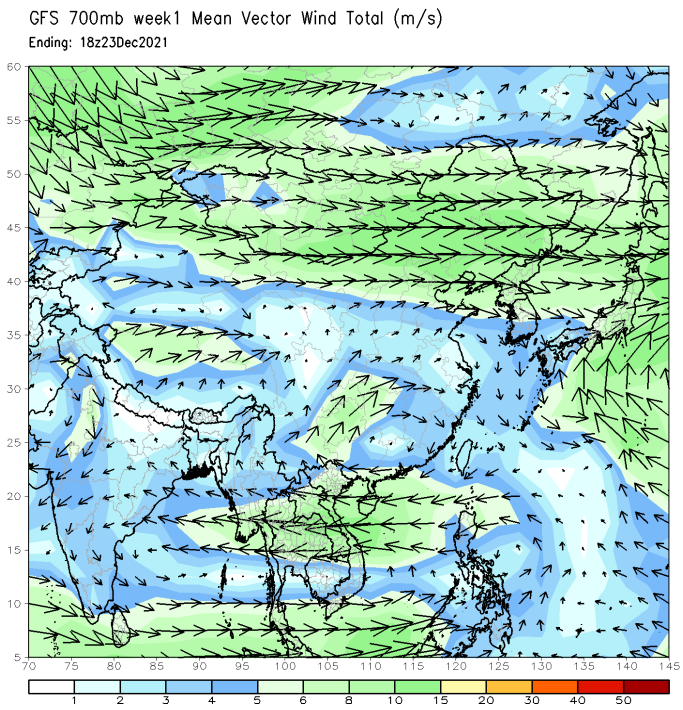




Weekly Wind Forecast

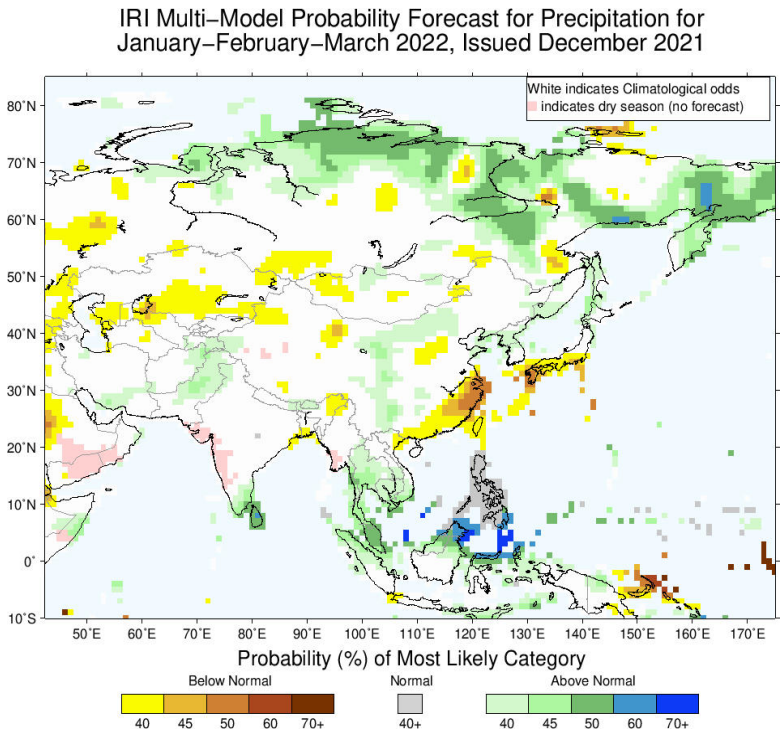
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



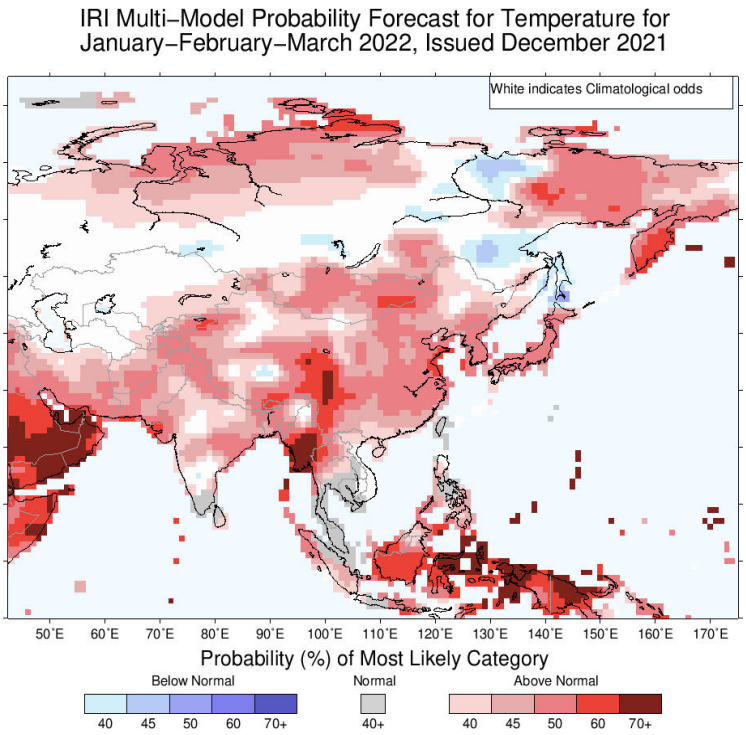


Seasonal Rainfall and Temperature Forecast

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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