

Week of
27 Aug - 3 Sept
2021

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



- Fairly heavy rainfalls are predicted in Central, Sabaragamuwa, Southern & Western provinces during 27th - 31st August

Monitored Rainfalls



- Heavy rainfalls were experienced in the Northern & North Central provinces with max of 142.5 mm in Mullaitivu district on 22nd August

Monitored Wind



- From 17th - 23rd August: up to 10 km/h from the South westerly were experienced over the island.

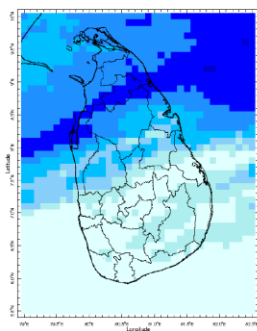
Monitored Sea Surface



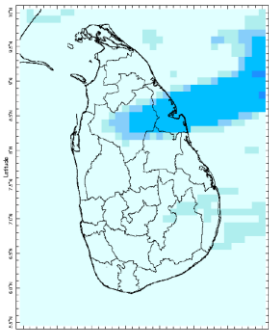
- Sea surface temperature was observed above 0.5 °C around all of Sri Lanka.

Monitoring Rainfall

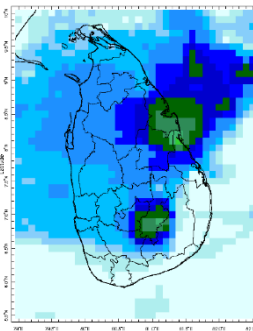
Daily Estimates for Rainfall from 18th – 24th August



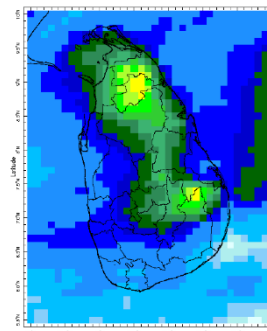
18 August



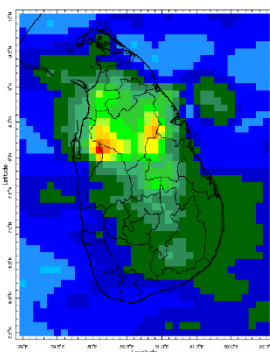
19 August



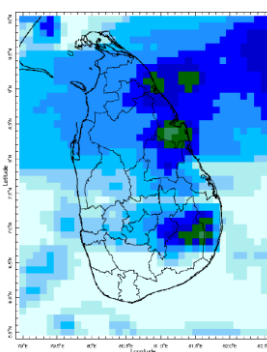
20 August



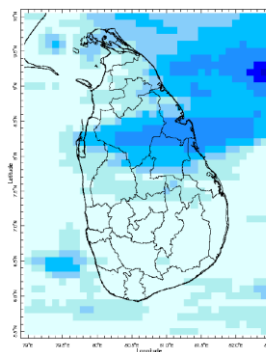
21 August



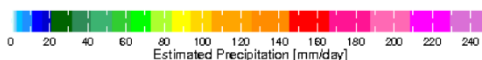
22 August



23 August



24 August



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& Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: August 18, 2021

Equatorial SSTs were below average in parts of the eastern Pacific Ocean and near average across the rest of the Pacific Ocean in mid-August and most key atmospheric variables were ENSO –Neutral condition. A large majority of the model forecasts predict ENSO-neutral likely to continue through the Northern Hemisphere summer.

Indian Ocean State

Sea surface temperature was observed above 0.5°C around all of Sri Lanka.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 25th – 31st August:

Total rainfall by Provinces:

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

From 1st – 7th September:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall be active thus, slightly enhanced rainfall during 25th August – 8th September.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been heavy rainfall over the following Provinces: Northern and North Central.

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

Temperatures: The temperature anomalies were normal for the whole country the last week – driven by the warm SST's.

Predictions

Rainfall: During the next week (27th – 31st August) fairly heavy rainfall is predicted for Central, Sabaragamuwa, Southern and Western provinces.

Temperatures: The temperature remains slightly normal for August. During 27th August – 4th September, the temperature remains high especially in the Eastern and Uva provinces.

Teleconnections:

La Nina -The SST forecast indicates that the La Niña event has transitioned to ENSO-neutral and will likely remain so through the boreal summer.

MJO shall be active thus, slightly enhanced rainfall during 25th August – 8th September.

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

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2. Predictions

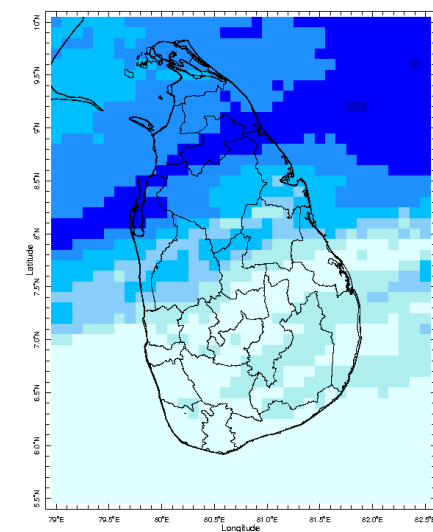
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- GFS (T574) Model Rainfall Forecast from RMSC New Delhi
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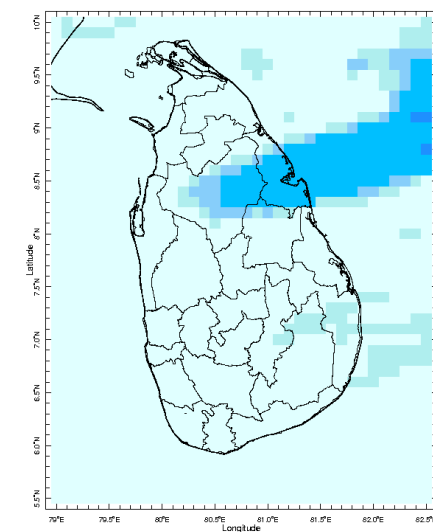
MONITORING

Daily Rainfall Monitoring

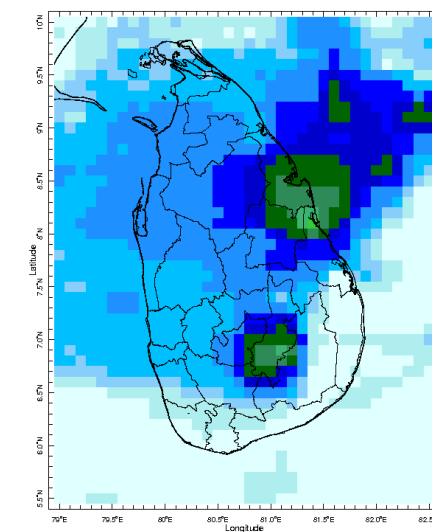
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



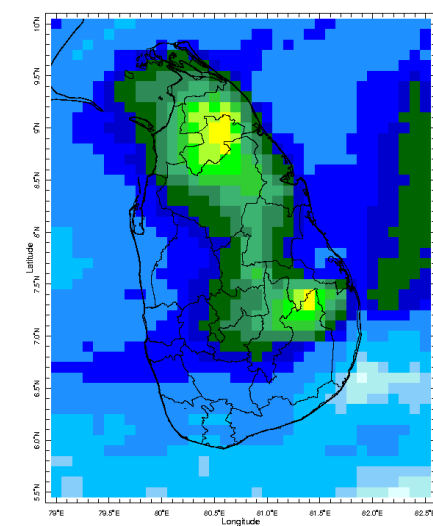
18 Aug 2021



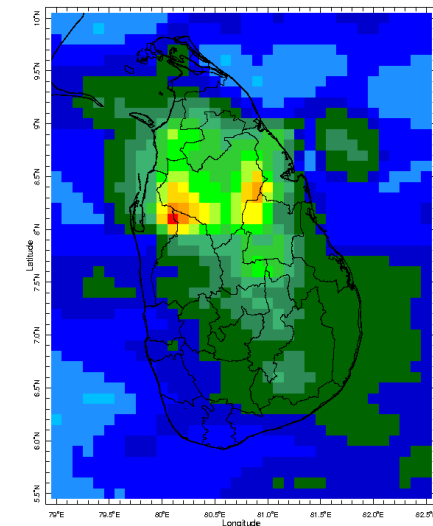
19 Aug 2021



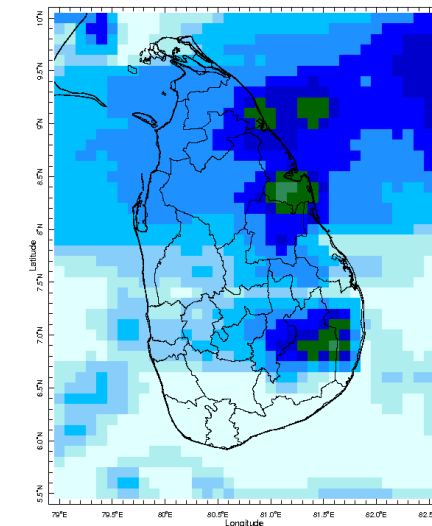
20 Aug 2021



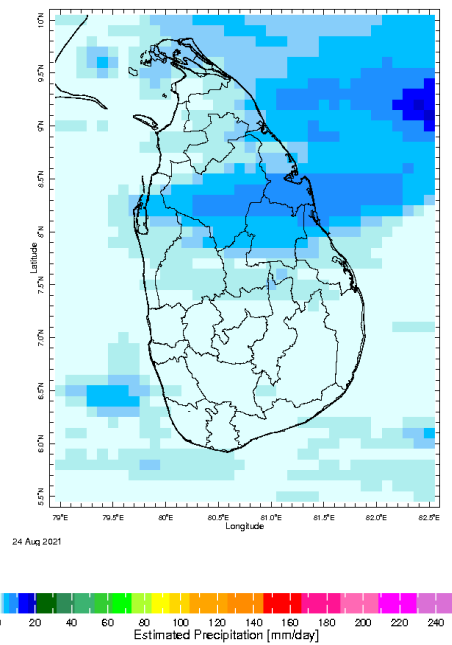
21 Aug 2021



22 Aug 2021

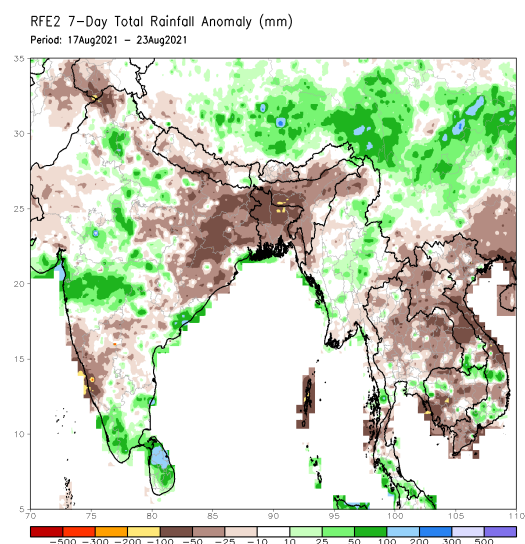
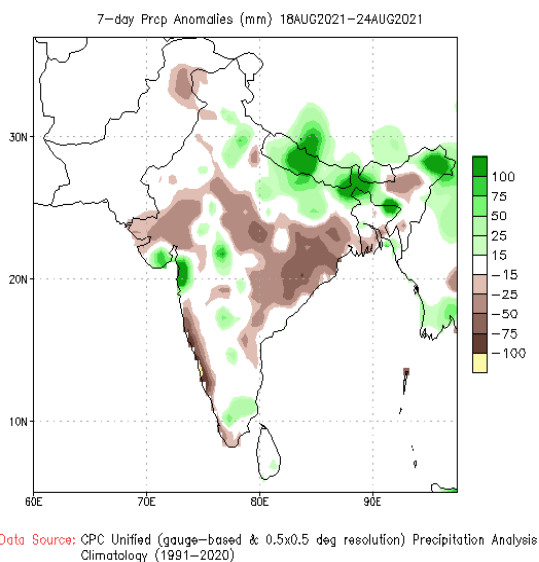
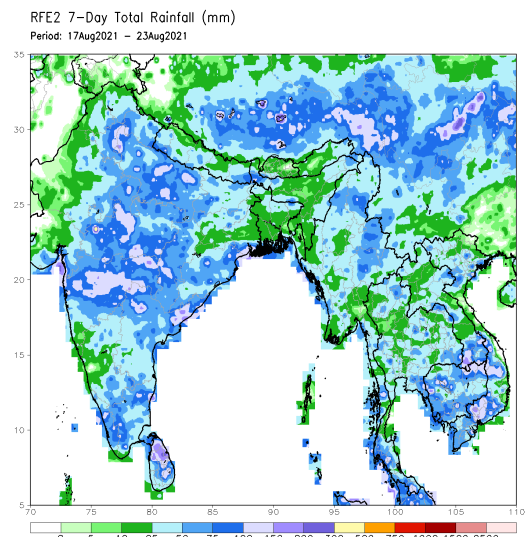
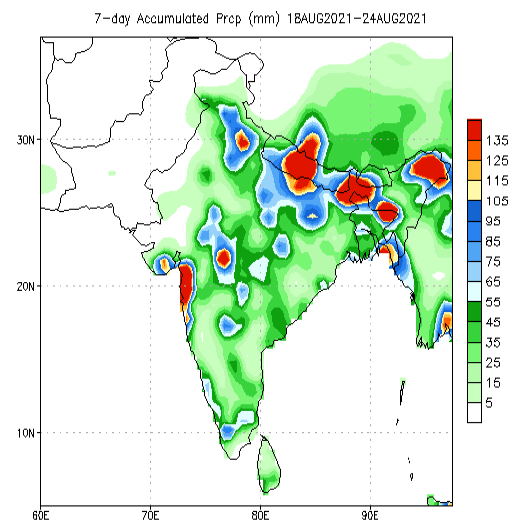


23 Aug 2021



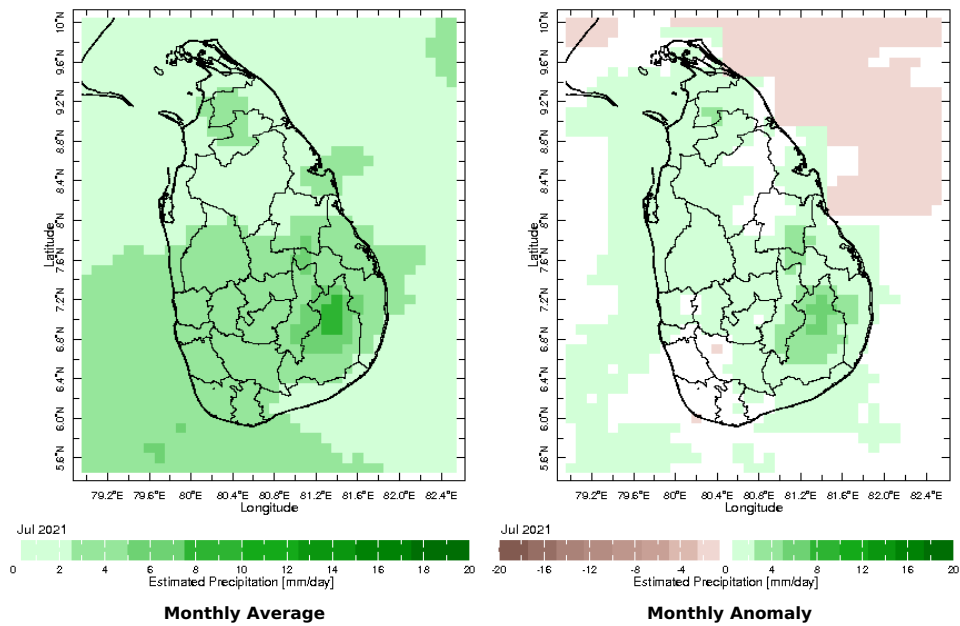
Weekly Rainfall Monitoring

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.

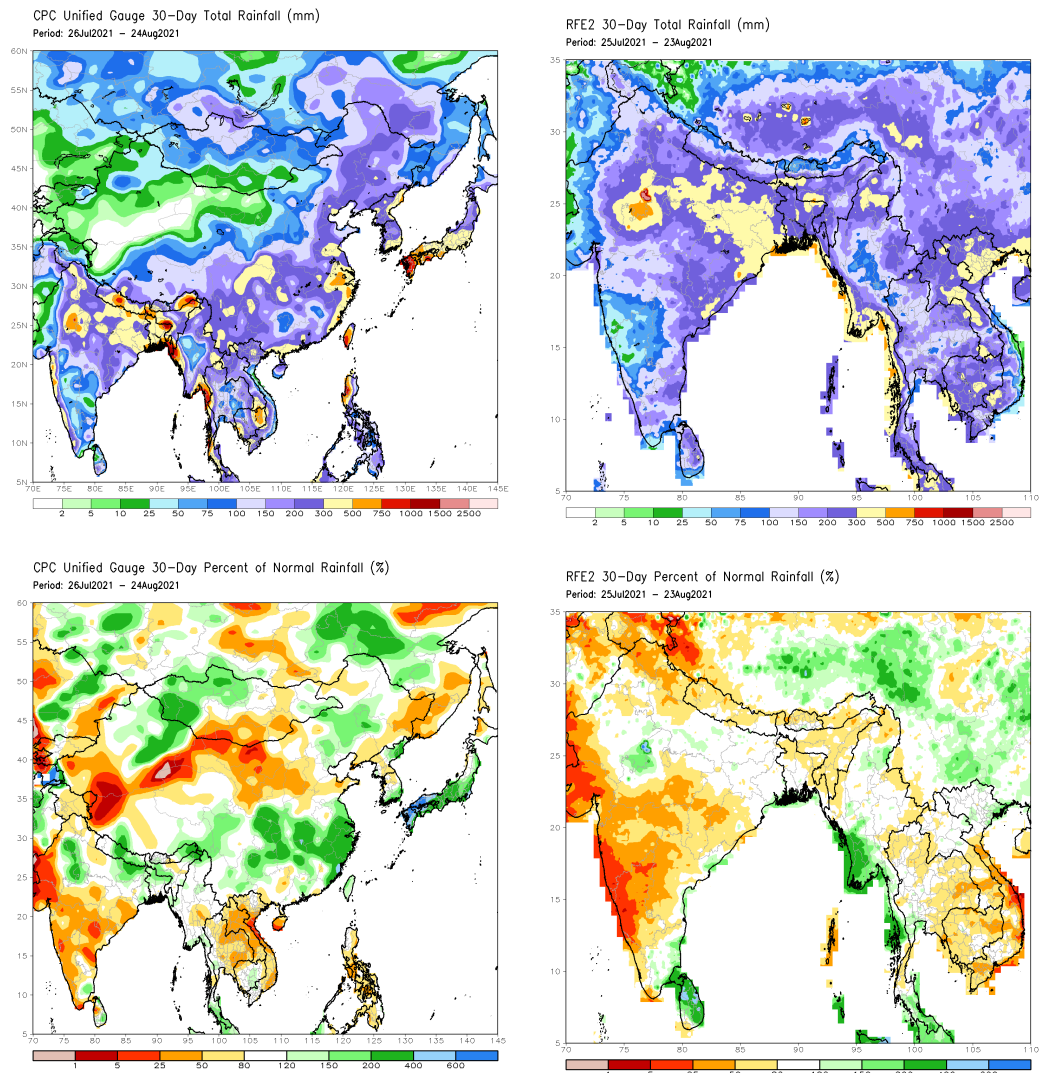


Monthly Rainfall Monitoring

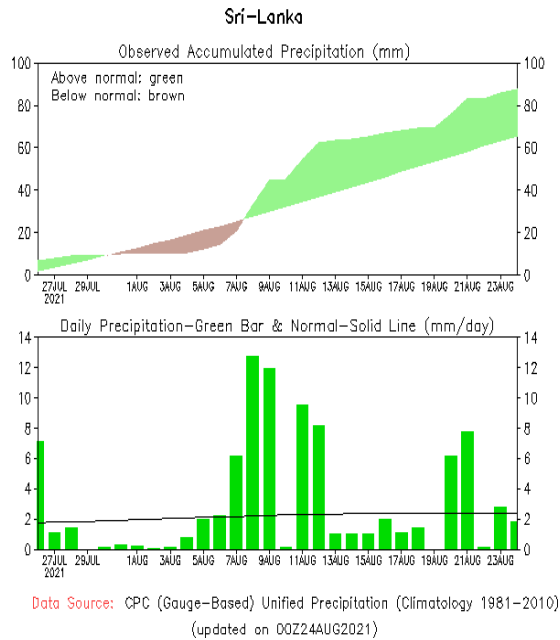
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



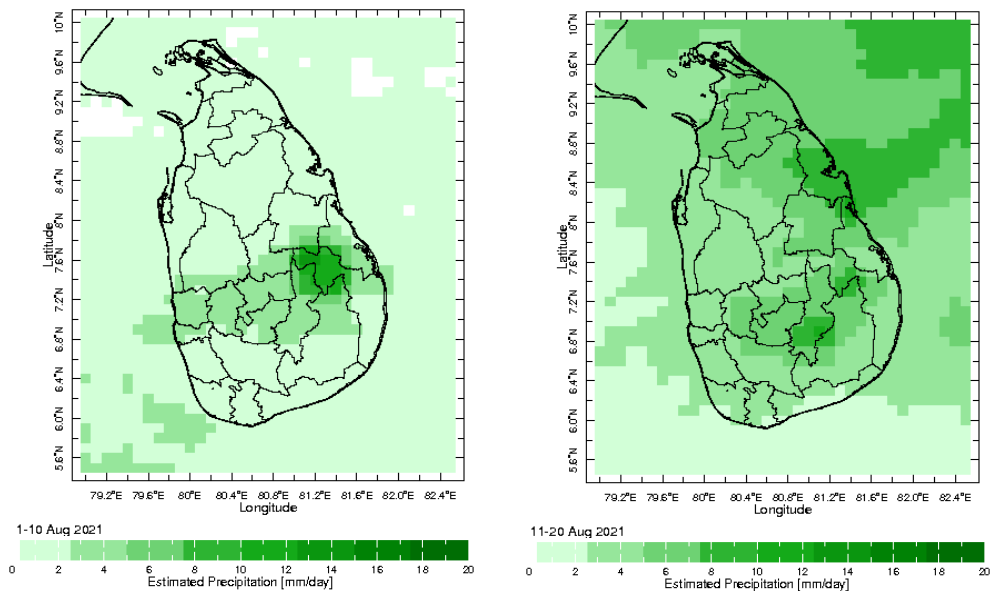
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



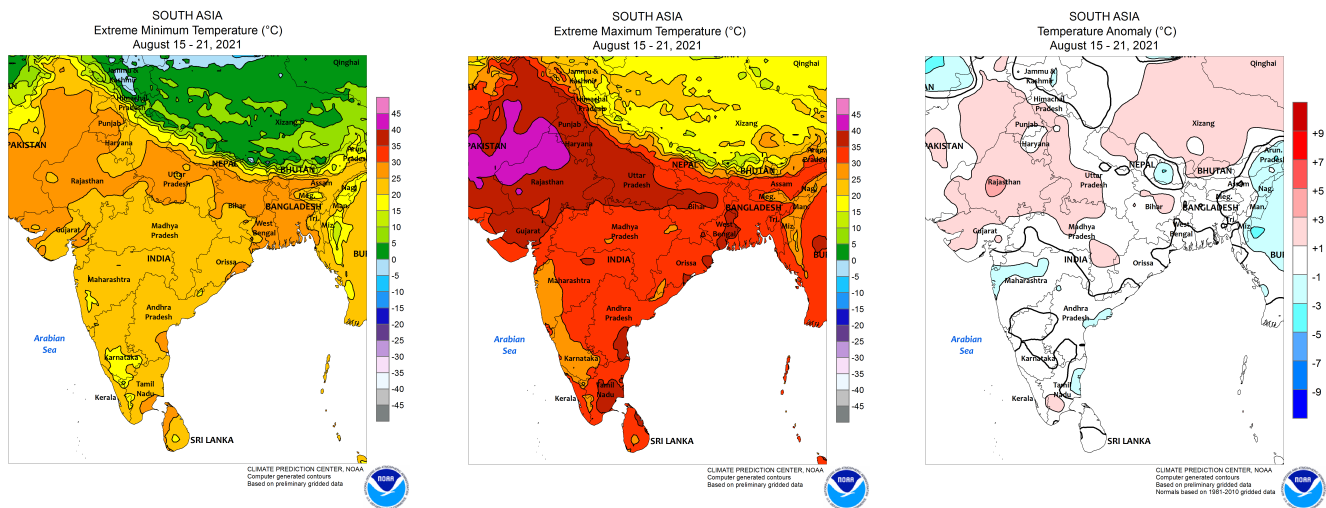
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

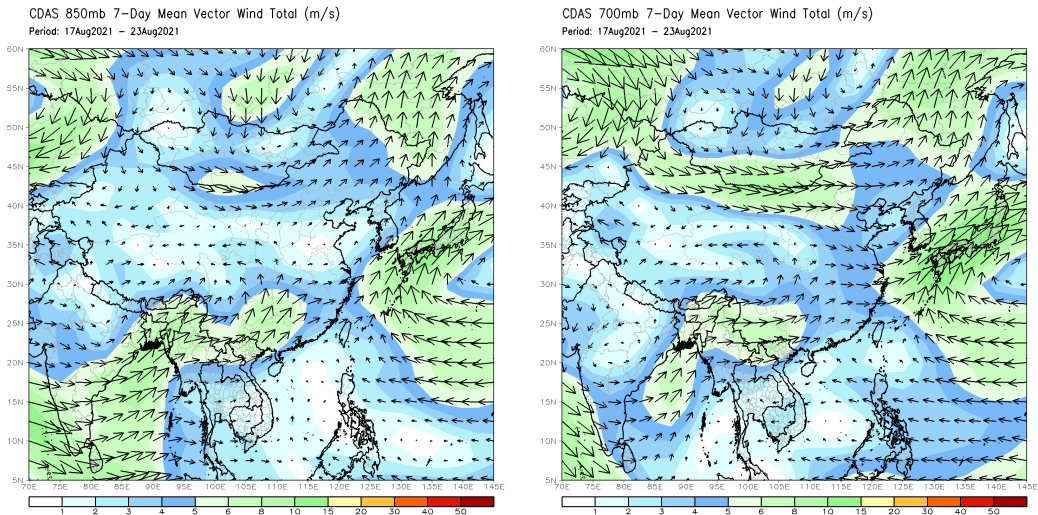


Weekly Temperature Monitoring



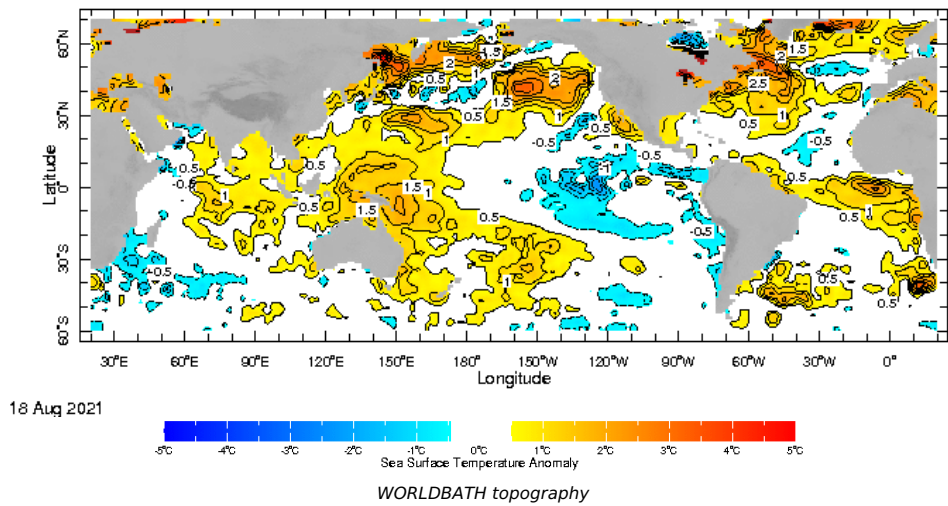
Weekly Wind Monitoring

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.

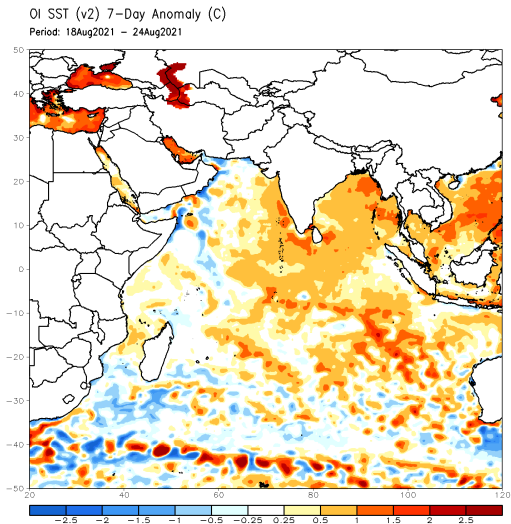


Weekly Average SST Anomalies

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



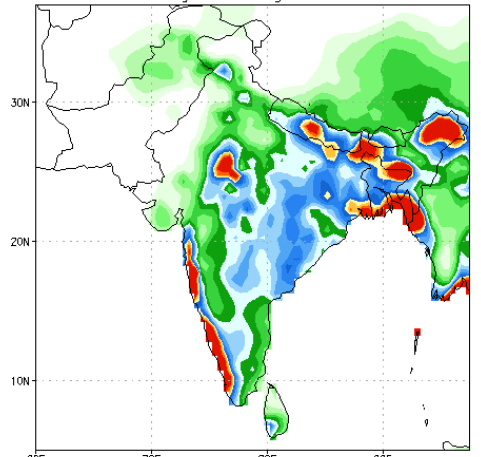
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



PREDICTIONS

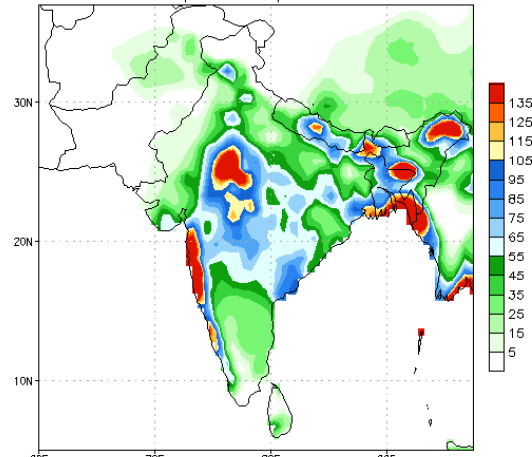
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 25Aug2021
25Aug2021-31Aug2021 Accumulation



Bias correction based on last 30-day forecast error

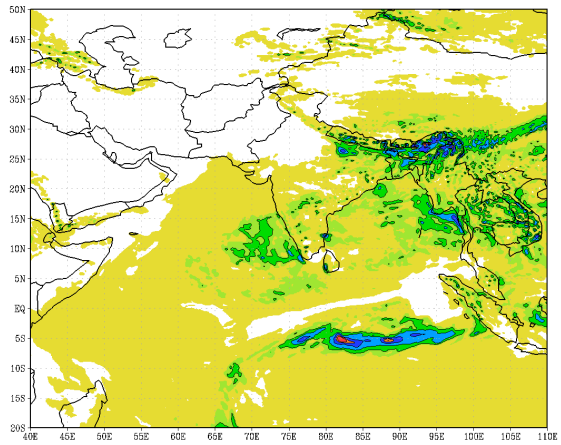
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 25Aug2021
01Sep2021-07Sep2021 Accumulation



Bias correction based on last 30-day forecast error

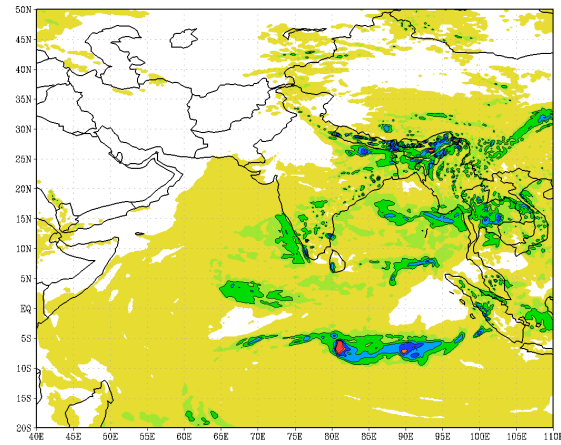
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 26-08-2021 valid for 03 UTC of 27-08-2021



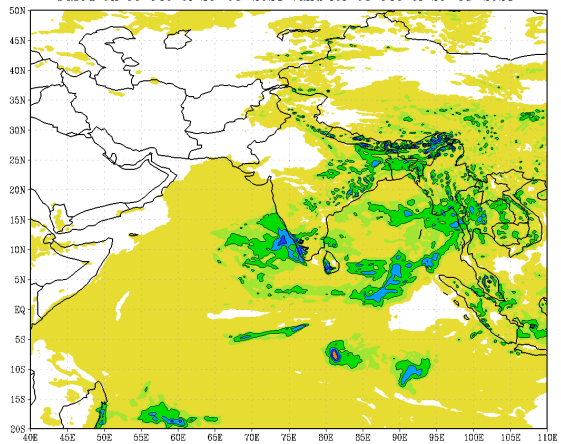
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 26-08-2021 valid for 03 UTC of 28-08-2021



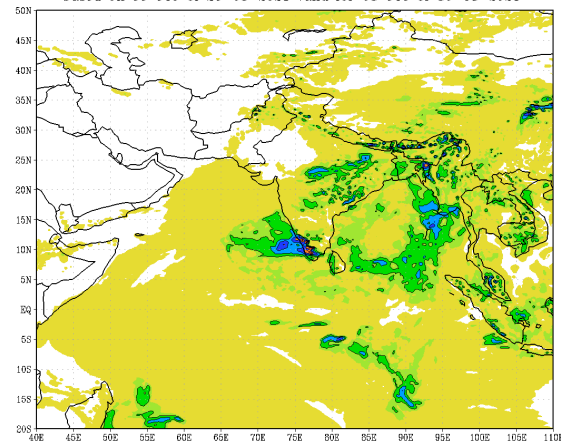
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 26-08-2021 valid for 03 UTC of 29-08-2021

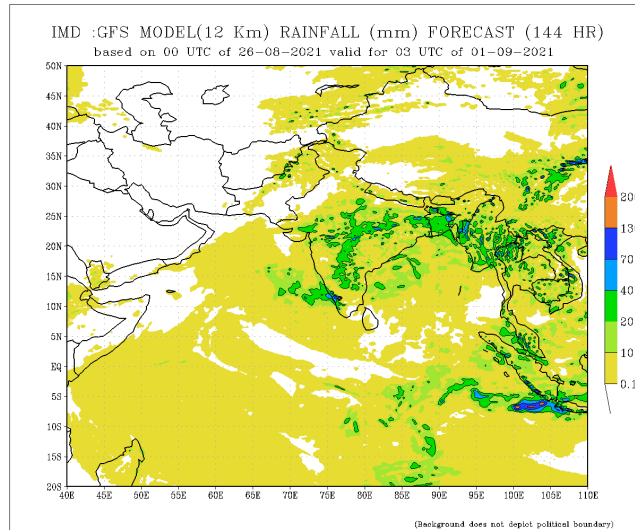
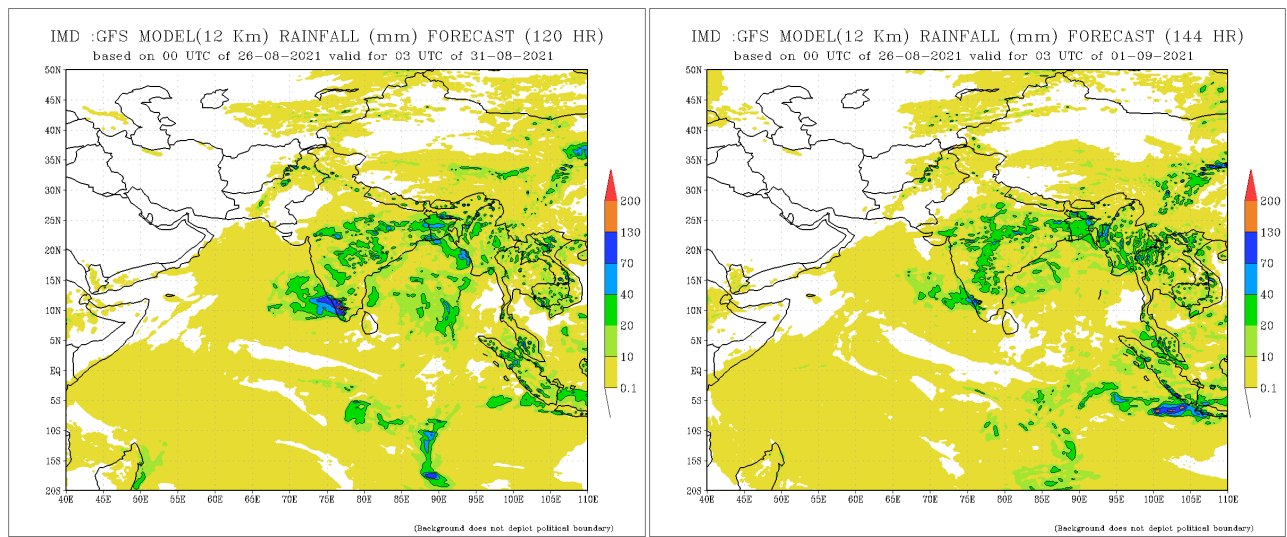


(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 26-08-2021 valid for 03 UTC of 30-08-2021



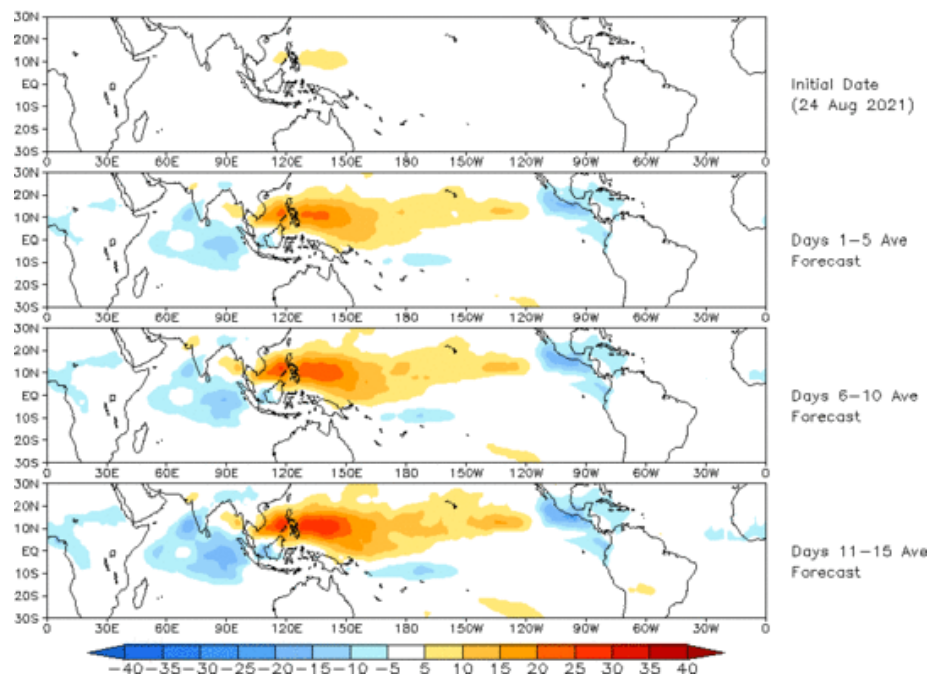
(Background does not depict political boundary)



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

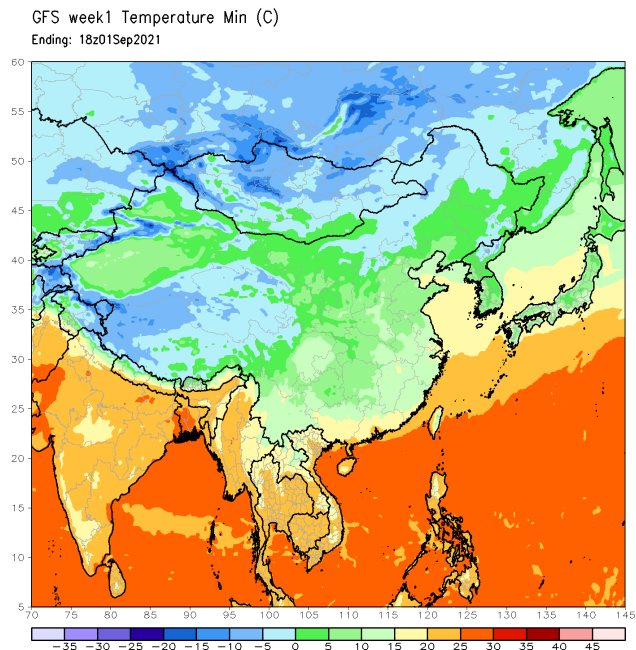
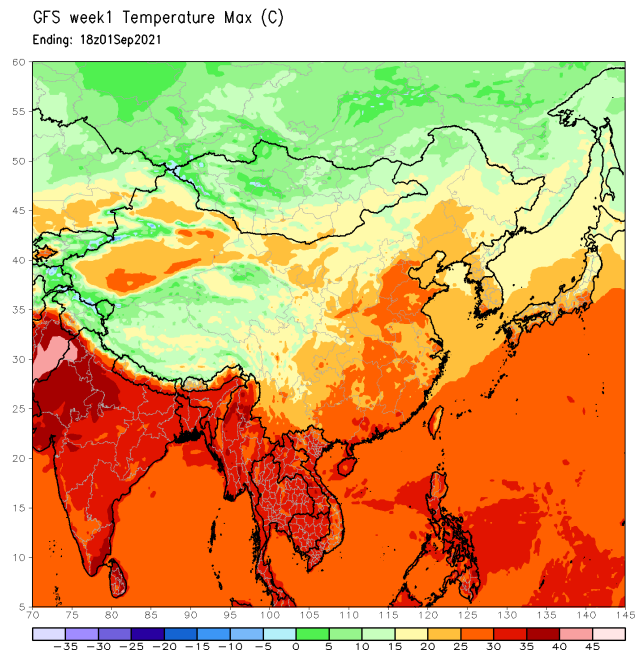
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated 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 (24 Aug 2021)



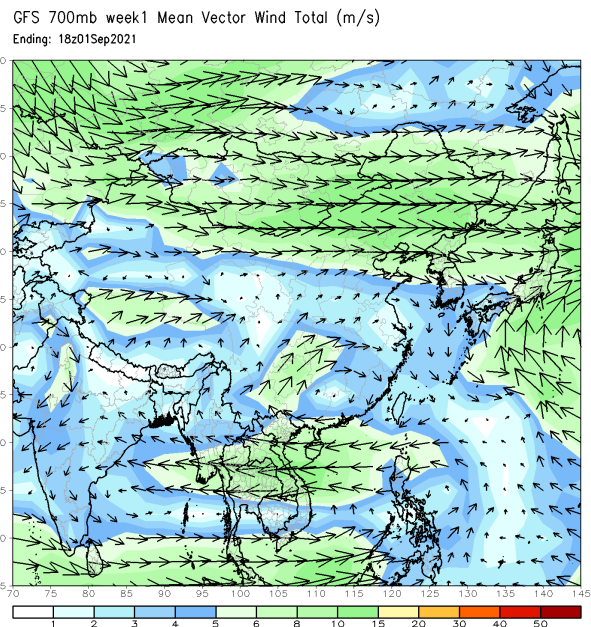
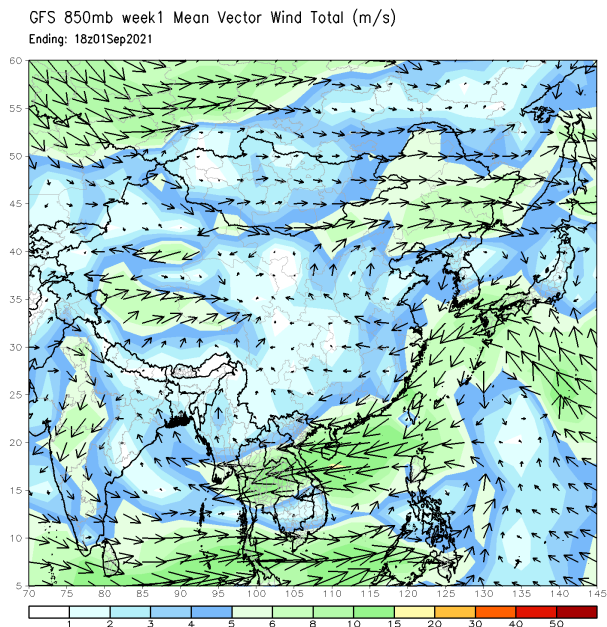
Weekly Temperature Forecast

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



Weekly Wind Forecast

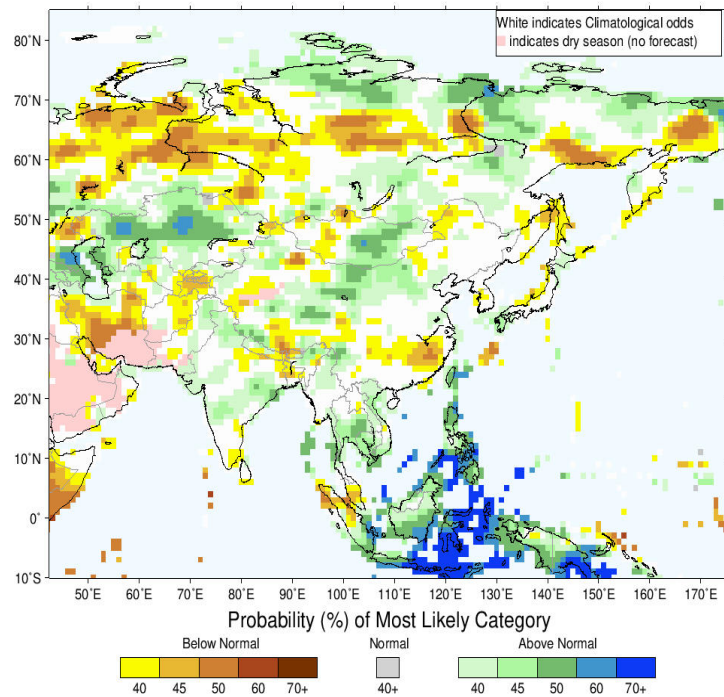
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



Seasonal Rainfall and Temperature Forecast

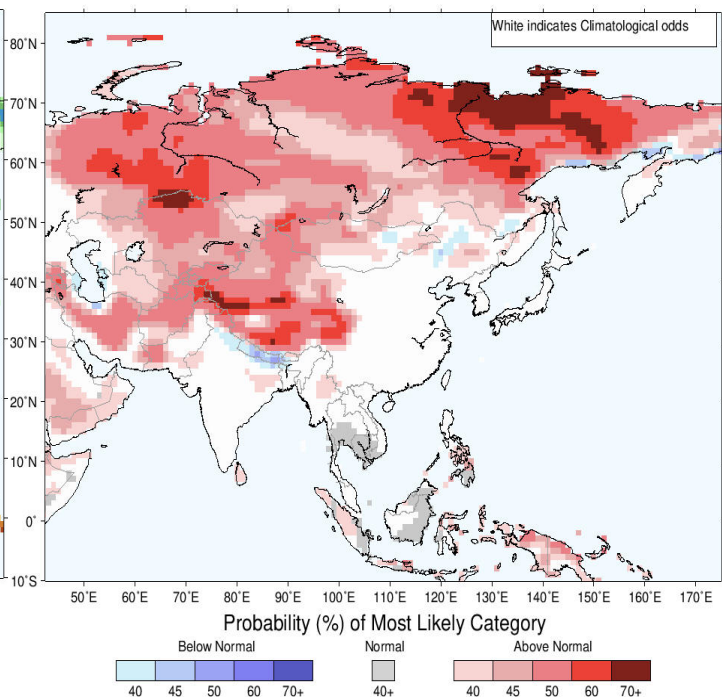
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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%).

IRI Multi-Model Probability Forecast for Precipitation for September–October–November 2021, Issued August 2021



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for September–October–November 2021, Issued August 2021



Temperature Forecast

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