

Week of
6 - 13 Aug
2021

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



- Fairly heavy rainfalls are predicted in Western, Sabaragamuwa, Northcentral, Central & Southern provinces during 6th -9th Aug.

Monitored Rainfalls



- Fairly heavy rainfalls were experienced in the Western, Central & Sabaragamuwa provinces with max of 54 mm in Ratnapura district on 27th July.

Monitored Wind



- From 26th July - 1st August: up to 15 km/h from the South westerly were experienced over the island.

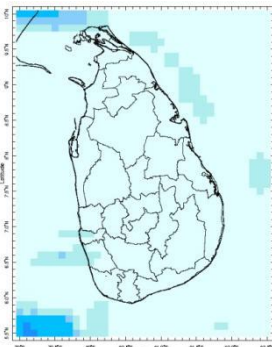
Monitored Sea Surface



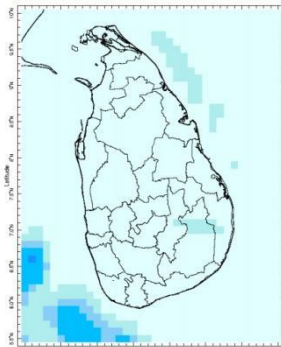
- Sea surface temperature was observed above 0.5 °C around all of Sri Lanka.

Monitoring Rainfall

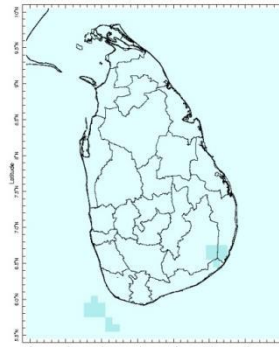
Daily Estimates for Rainfall from 27th July – 2nd August



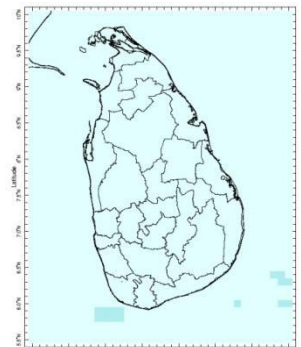
27 July



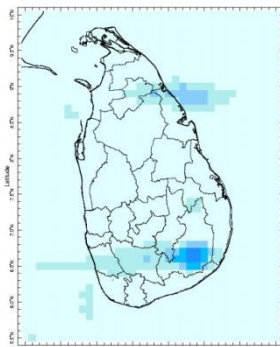
28 July



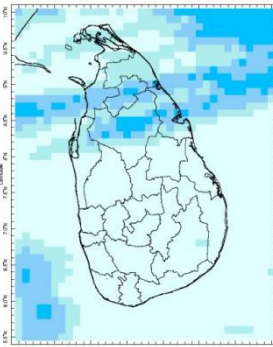
29 July



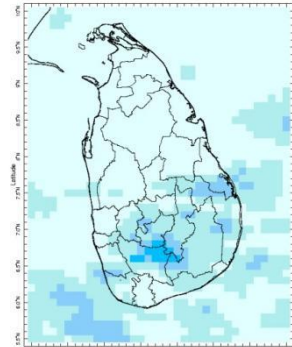
30 July



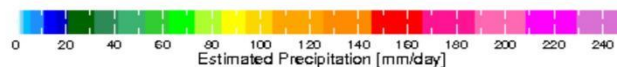
31 July



1 August



2 August



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Total Rainfall for the Past Week

The RFE 2.0 tool shows 7-day total Cumulative rainfall by Districts:

Rainfall	Districts
10 - 25 mm	Mullaitivu, Vavuniya, Anuradhapura, Trincomalee
5 – 10 mm	Jaffna, Mannar, Kalutara, Moneragala, Badulla
2 – 5 mm	Killinochchi, Puttalam, Kurunegala, Ratnapura, Ampara,

There was no rainfall throughout the week in the remaining districts.

Weekly Rainfall Anomalies by Districts:

Rainfall Deficit

Rainfall	Districts
10 - 25 mm	Puttalam, Kurunegala, Kandy, Nuwara Eliya, Gampaha, Colombo, Kalutara, Galle, Matara, Hambantota, Kegalle, Ratnapura, Moneragala, Badulla, Ampara, Batticaloa

There was no rainfall throughout the week in the remaining districts.

Monthly Monitoring

During middle and late of the July, Dekadal Rainfall (mm/day) by Districts:

11th– 20th July:

Rainfall	Districts
12 mm	Moneragala
8 mm	Badulla
6 mm	Ampara, Batticaloa, Polonnaruwa, Trincomalee, Vavuniya, Mannar
4 mm	Galle, Matara, Hambantota, Ratnapura, Kegalle, Gampaha, Nuwara Eliya, Kandy, Matale, Kalutara, Puttalam, Kurunegala, Anuradhapura, Mullaitivu, Kilinochchi, Jaffna
2 mm	Colombo

21st– 31st July:

Rainfall	Districts
4 mm	Colombo, Kalutara, Kegalle, Ratnapura, Moneragala, Ampara, Batticaloa, Gampaha, Badulla
2 mm	Kandy, Nuwara Eliya, Mannar, Vavuniya, Mullaitivu, Trincomalee, Puttalam, Kurunegala, Matale, Anuradhapura, Polonnaruwa, Hambantota, Matara, Galle

Ocean State (Text Courtesy IRI)

Pacific sea state: July 28, 2021

Equatorial SSTs were below average in parts of the eastern Pacific Ocean and near average across the rest of the Pacific Ocean in late July 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 3rd – 9th August:

Total rainfall by Provinces:

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

From 10th – 16th August:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall be neutral the rainfall during 6th – 16th August.

Interpretation

Monitoring

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

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

Temperatures: The temperature anomalies were slightly above normal for the Sabaragamuwa province the last – driven by the warm SST's.

Predictions

Rainfall: During the next week (6th – 9th August) Fairly heavy rainfall are predicted for Sabaragamuwa, Western, North Central and Central provinces; and in Galle and Matara districts.

Temperatures: The temperature remains slightly normal for August. During 6th – 14th August, the temperature remains high especially 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 neutral the rainfall during 6th – 16th August.

Understanding the forecast

	Rainfall (During 24 hours of period)
Light showers	less than 12.5mm
Light to Moderate	between 12.5mm and 25 mm
Moderate	between 25mm and 50 mm
Fairly heavy	between 50mm and 100 mm
Heavy	between 100mm and 150 mm
Very Heavy	more than 150mm

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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- Weekly Wind Monitoring
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2. Predictions

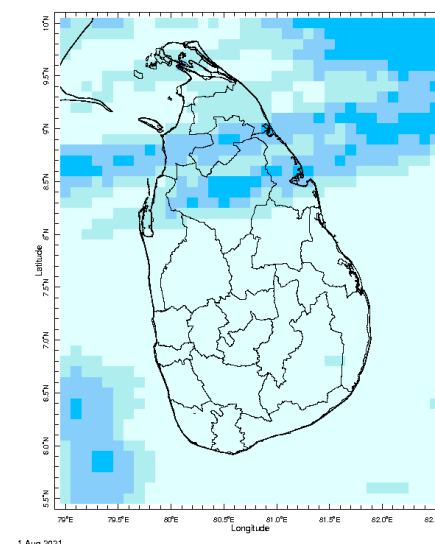
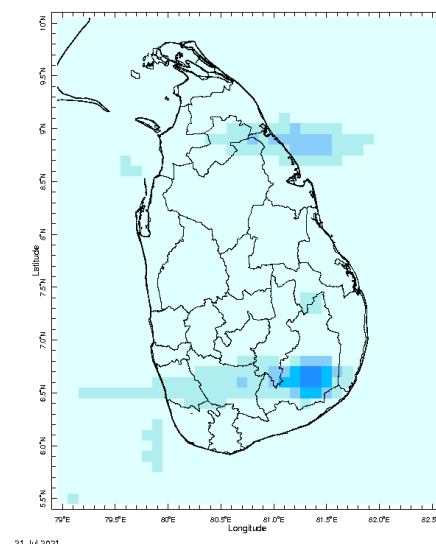
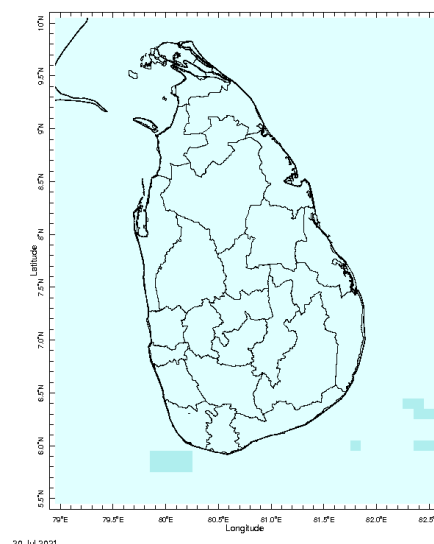
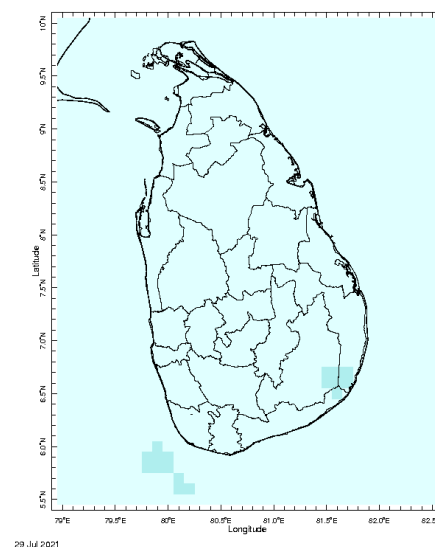
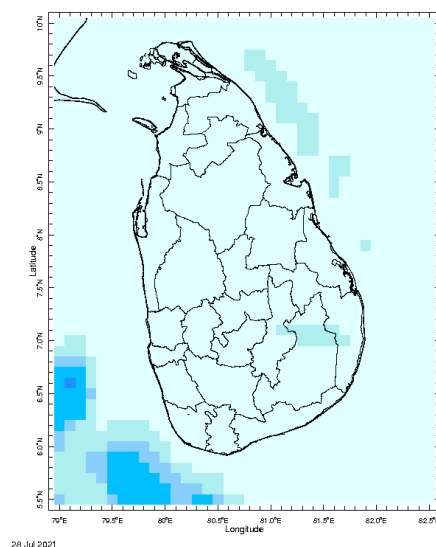
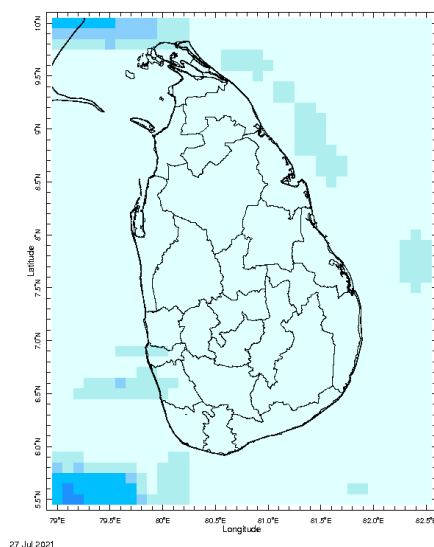
- NCEP GFS Ensemble 1-14 day Rainfall Predictions
- GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- MJO Related OLR Forecast
- Weekly Temperature Forecast
- Weekly Wind Forecast
- Seasonal Predictions from IRI

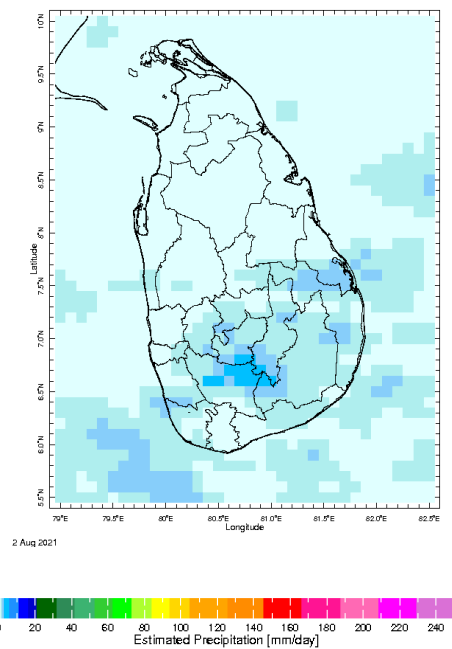


MONITORING

Daily Rainfall Monitoring

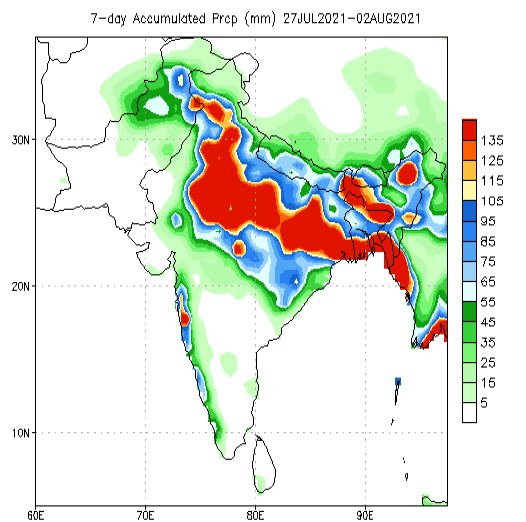
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



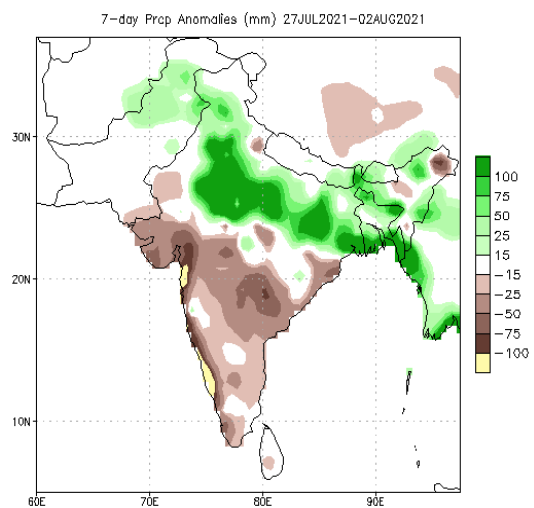
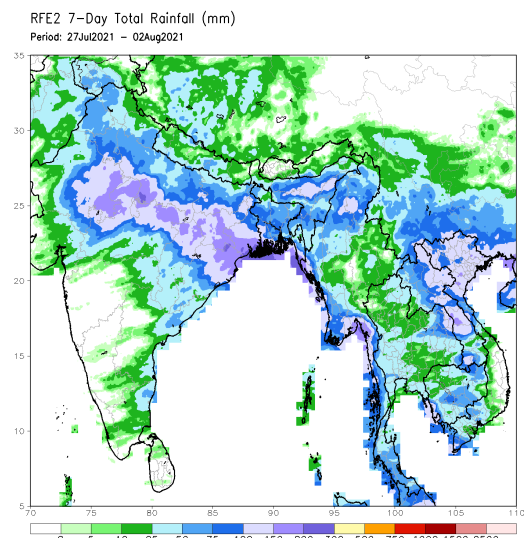


Weekly Rainfall Monitoring

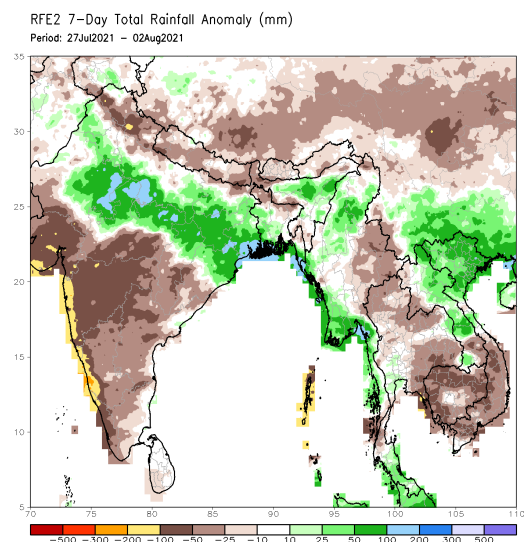
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.



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

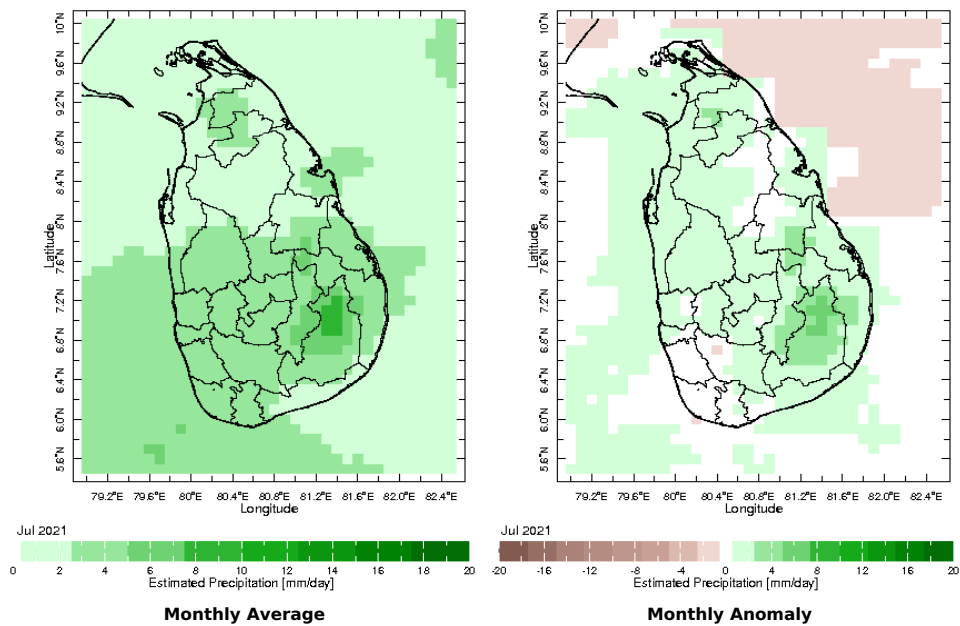


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1991-2020)

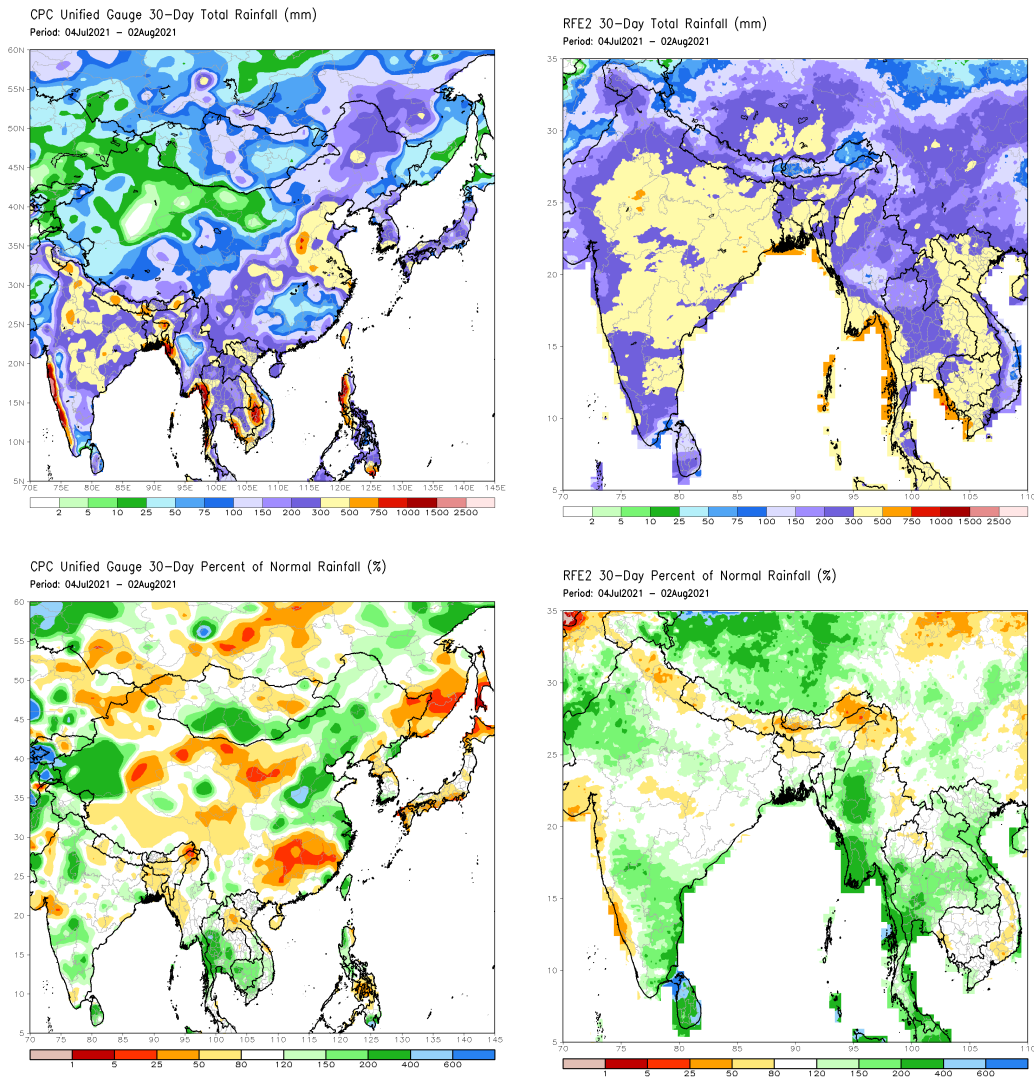


Monthly Rainfall Monitoring

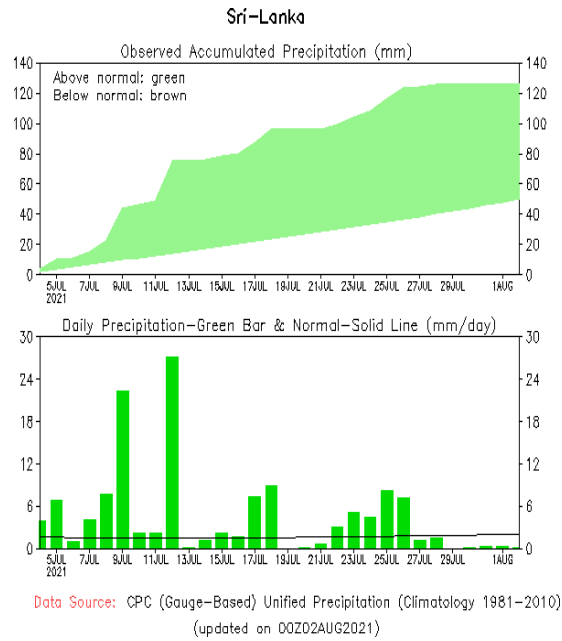
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



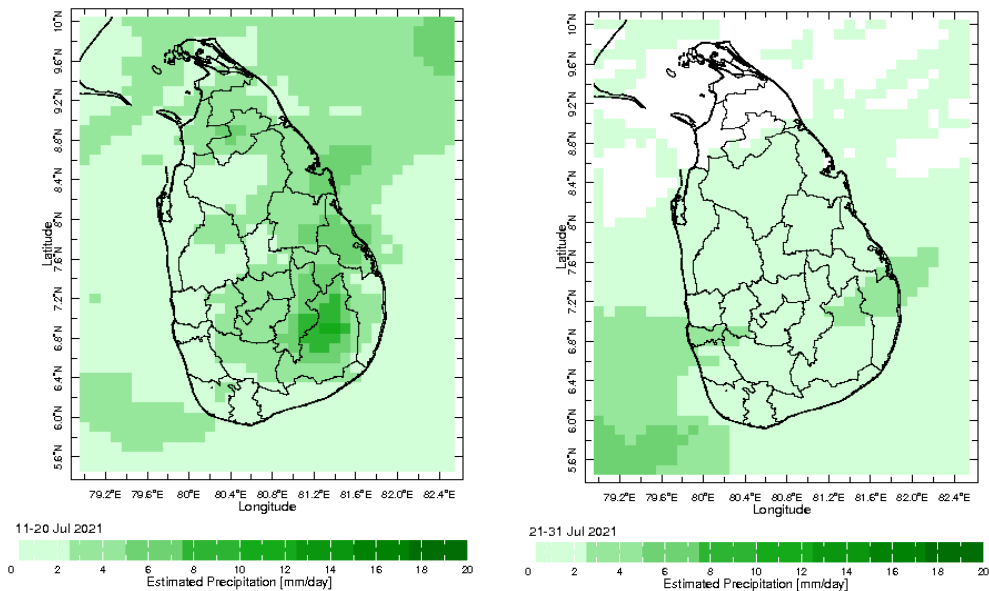
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



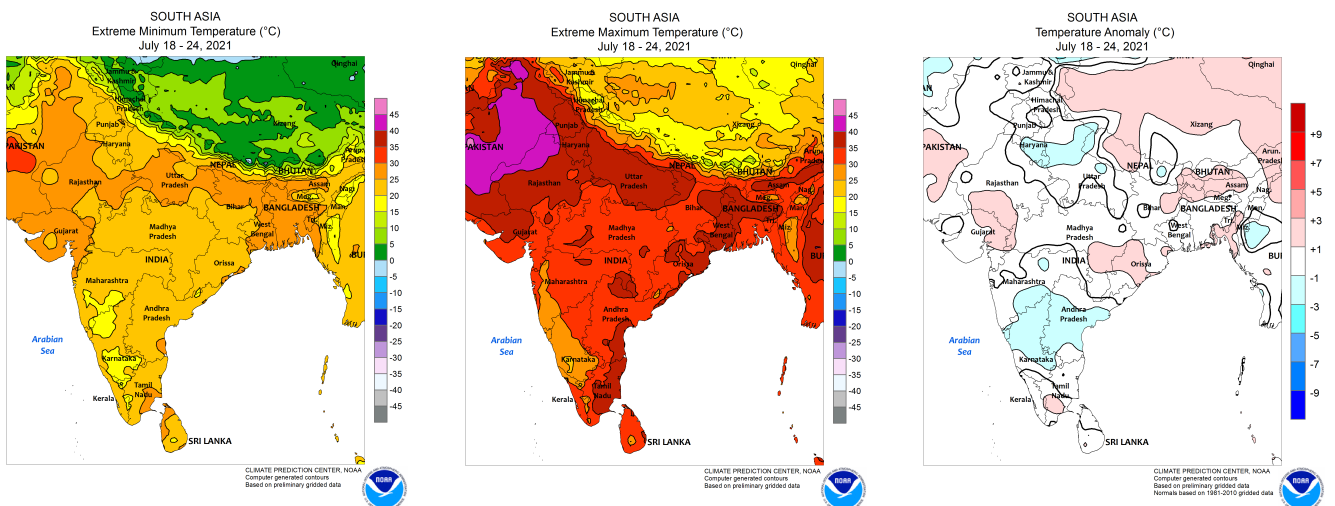
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

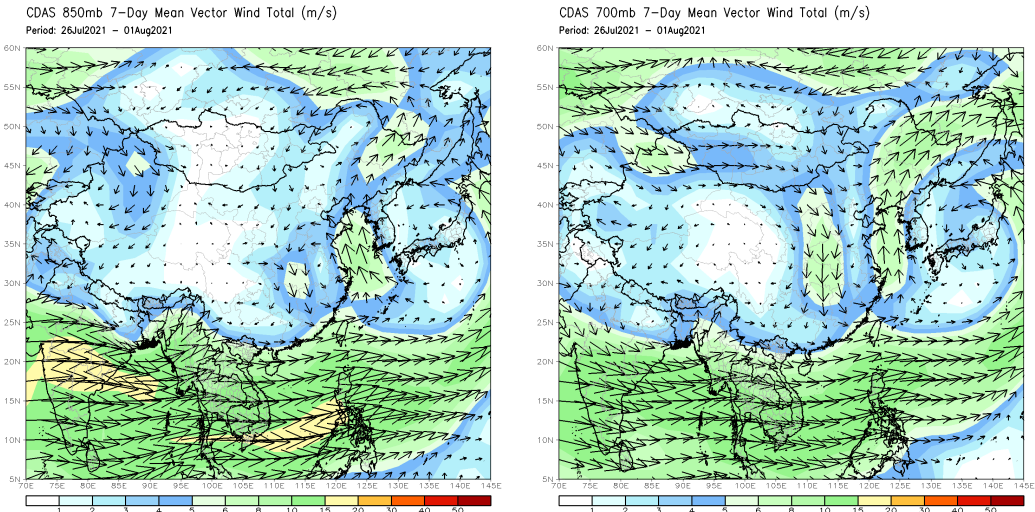


Weekly Temperature Monitoring



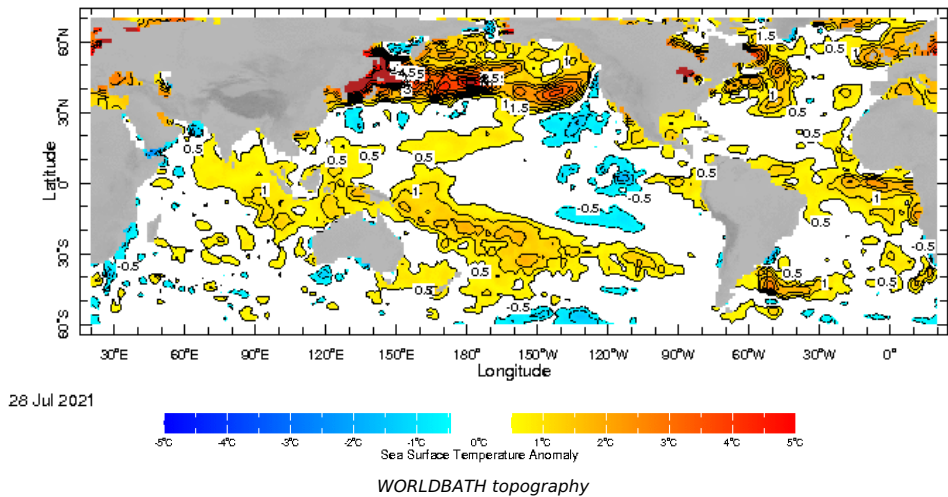
Weekly Wind Monitoring

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.

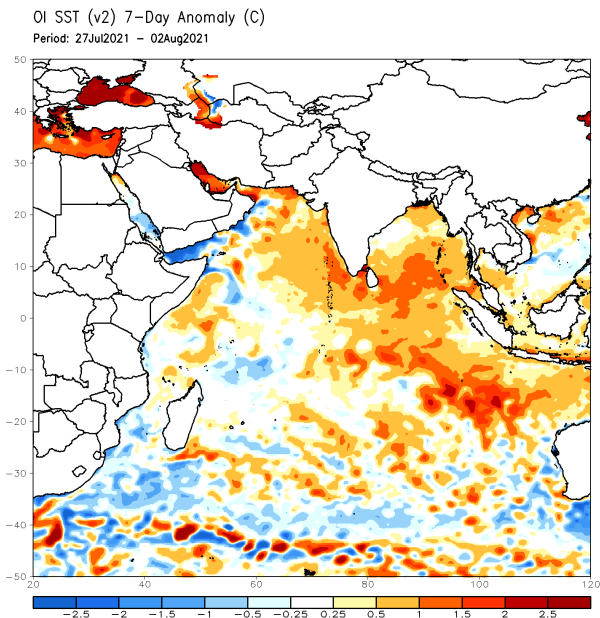


Weekly Average SST Anomalies

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



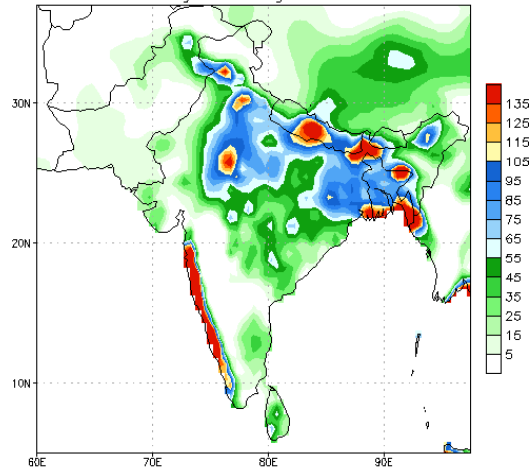
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



PREDICTIONS

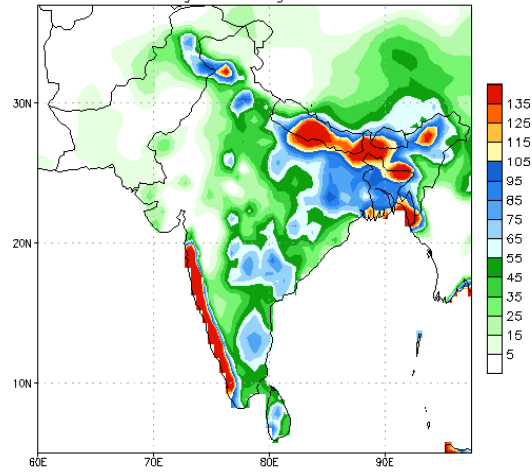
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 03Aug2021
03Aug2021-09Aug2021 Accumulation



Bias correction based on last 30-day forecast error

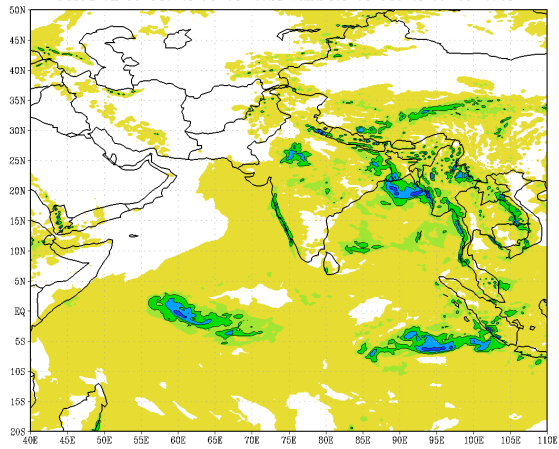
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 03Aug2021
10Aug2021-16Aug2021 Accumulation



Bias correction based on last 30-day forecast error

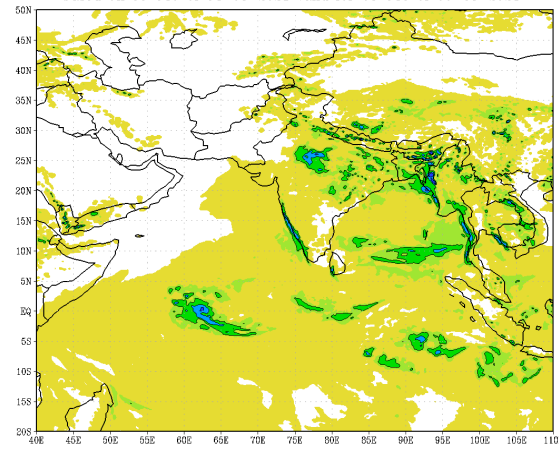
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 04-08-2021 valid for 03 UTC of 05-08-2021



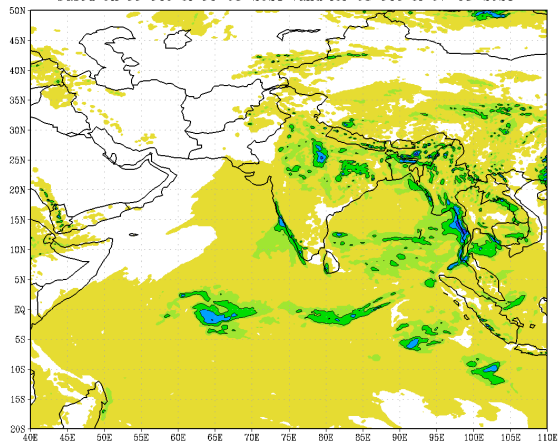
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 04-08-2021 valid for 03 UTC of 06-08-2021



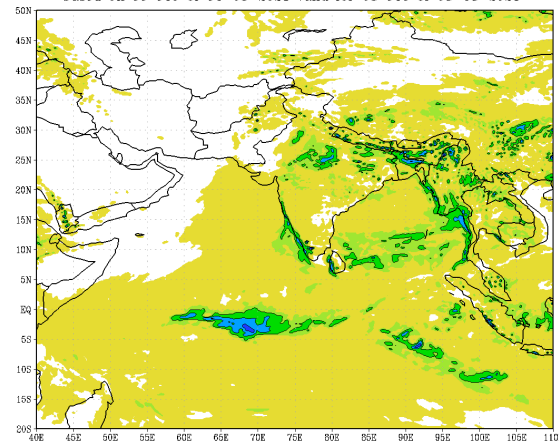
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 04-08-2021 valid for 03 UTC of 07-08-2021

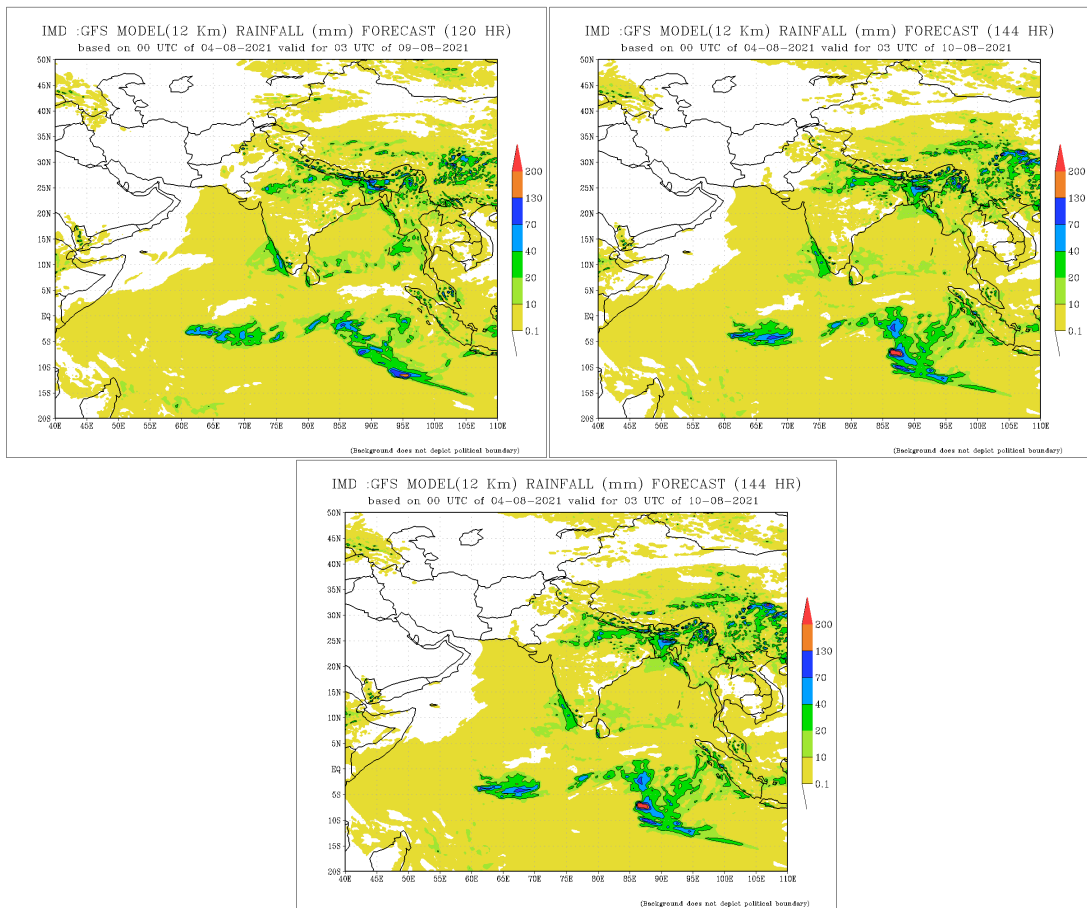


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IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 04-08-2021 valid for 03 UTC of 08-08-2021

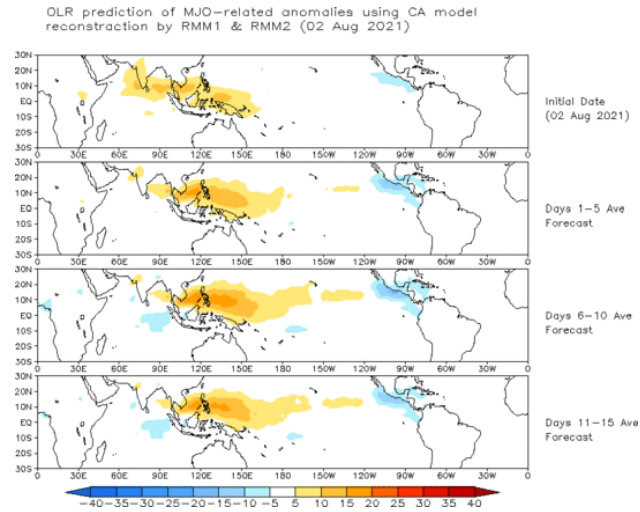


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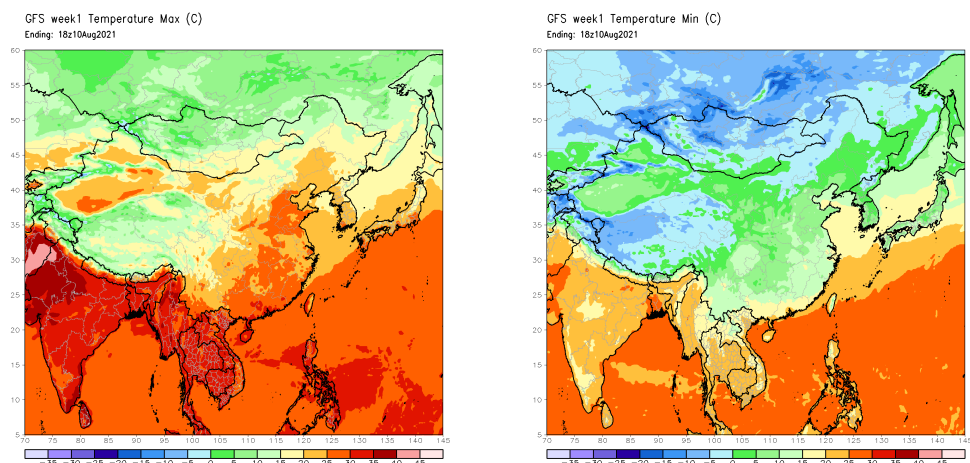
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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.



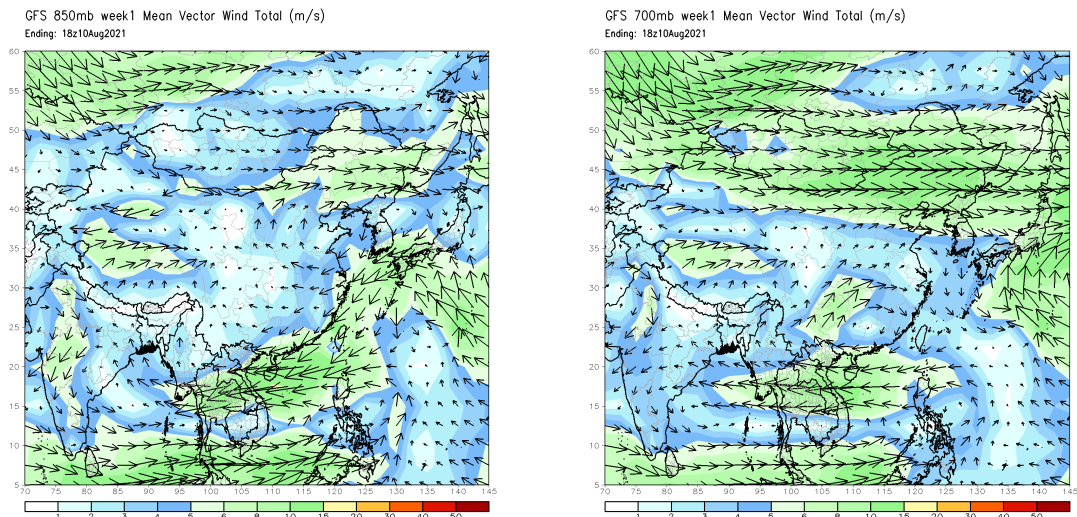
Weekly Temperature Forecast

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



Weekly Wind Forecast

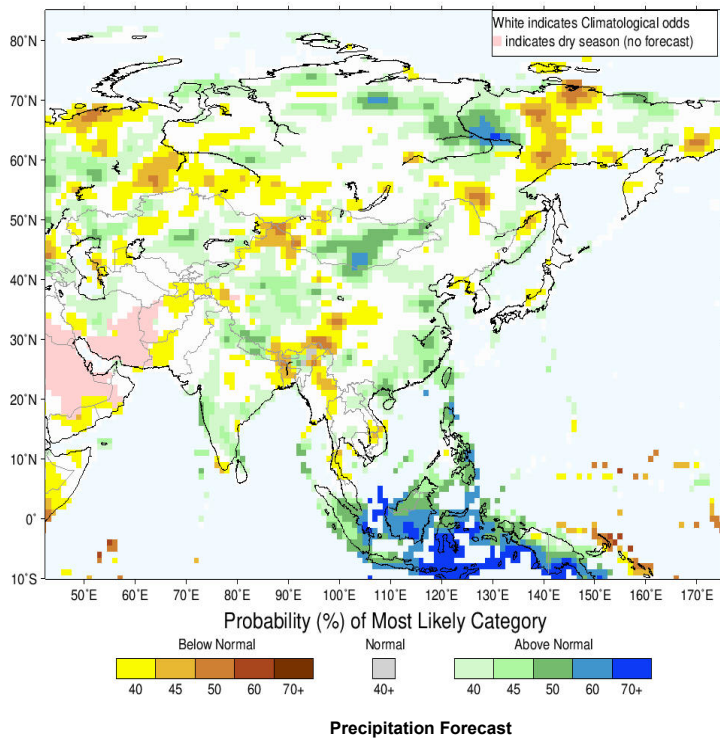
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



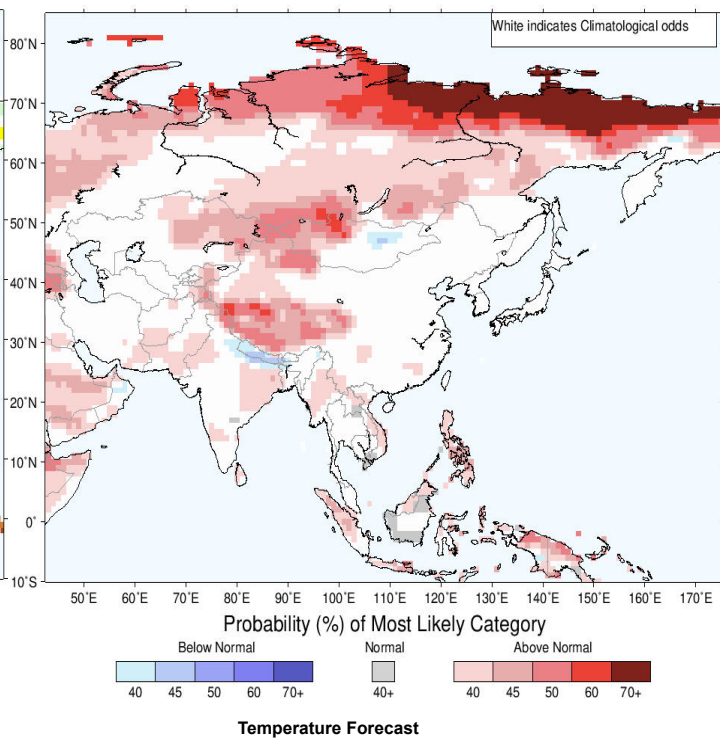
Seasonal Rainfall and Temperature Forecast

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 August–September–October 2021, Issued July 2021



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



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