

**Week of
9 - 16 July
2021**

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

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HIGHLIGHTS

Rainfall Prediction



- Very heavy rainfall is predicted in Western province during 9th-10th Jul; In Sabaragamuwa during 11th-14th Jul & heavy showers in Sabaragamuwa province from 15th-21st Jul.

Monitored Rainfalls



- Dangerously heavy rainfalls were experienced in the Western province with max of 170 mm in Kalutara district on 1st July

Monitored Wind



- From 30th June-6th July: up to 8 km/h from the West and South were experienced over the island.

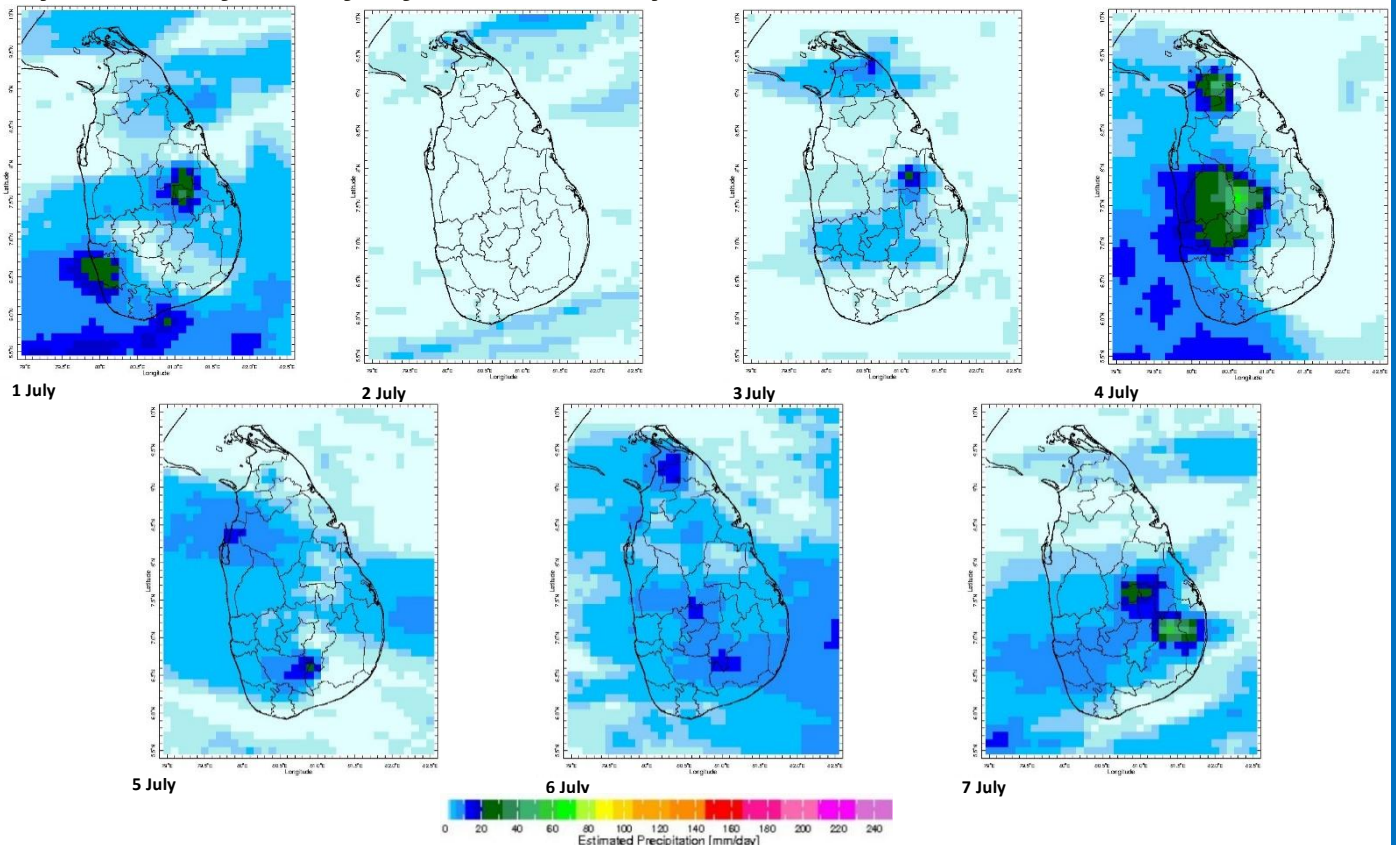
Monitored Sea Surface



- Sea surface temperature anomalies near SL warmer to the South and North.

**Monitoring
Rainfall**

Daily Estimates for Rainfall from 1st – 7th July





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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
75 – 100 mm	Colombo, Kalutara, Gampaha, Galle, Kegalle
50 – 75 mm	Matara, Ratnapura, Nuwara Eliya, Kandy, Matale, Badulla, Ampara, Kurunegala, Puttalam, Anuradhapura, Polonnaruwa
25 – 50 mm	Hambantota, Moneragala, Batticaloa, Mannar, Vavuniya, Mullaitivu, Kilinochchi, Jaffna
5 – 10 mm	Trincomalee

Weekly Rainfall Anomalies by Districts:

Rainfall Excess

Rainfall	Districts
50 – 100 mm	Kalutara, Galle, Puttalam, Kurunegala, Matale
25 – 50 mm	Matara, Ratnapura, Colombo, Gampaha, Kegalle, Nuwara Eliya, Kandy, Badulla, Moneragala, Ampara, Batticaloa, Anuradhapura, Polonnaruwa, Mannar, Vavuniya, Mullaitivu, Kilinochchi
10 – 25 mm	Hambantota, Trincomalee, Jaffna

Monthly Monitoring

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

11th– 20th June:

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

21st– 30th June:

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



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Ocean State (Text Courtesy IRI)

Pacific sea state: June 23, 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-June 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 anomalies near SL warmer to the South and North.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 8th – 14th July:

Total rainfall by Provinces:

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

From 15th – 21st July:

Total rainfall by Provinces:

Rainfall	Provinces
75 mm	Sabaragamuwa
65 mm	Western, Southern
45mm	Central
35 mm	North western, Uva
15 mm	Eastern, North central, Northern

MJO based OLR predictions

For the next 15 days:

MJO shall slightly enhance the rainfall during 7th - 11th Jul; neutral during 12th – 16th Jul and slightly suppress during 17th – 21st Jul.



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Interpretation

Monitoring

Rainfall: During the last two weeks, there had been Dangerously heavy rainfall in Western province and Heavy showers in the Southern and Sabaragamuwa provinces.

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

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

Predictions

Rainfall: During the next week (9th – 10th July) very heavy rainfall are predicted for Western province; (11th – 14th July) very heavy rainfall for Sabaragamuwa province and in Galle and Matara districts. And fairly heavy showers will occur North-western and Central provinces during next week.

Temperatures: The temperature remains slightly normal for July. During 10th – 18th July, 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.

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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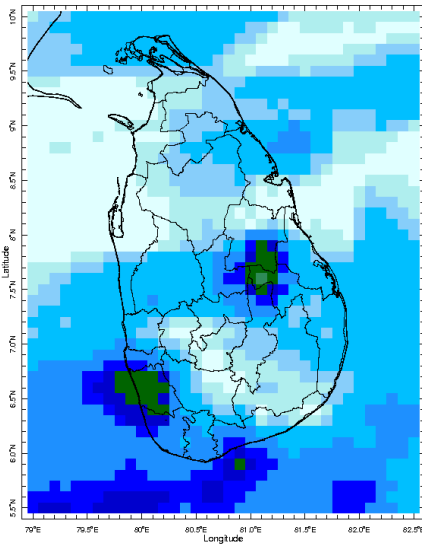
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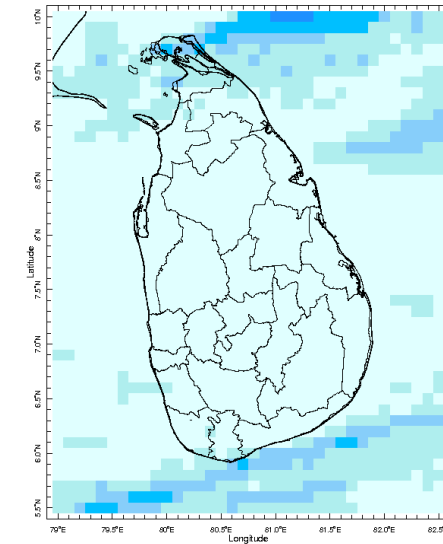
MONITORING

Daily Rainfall Monitoring

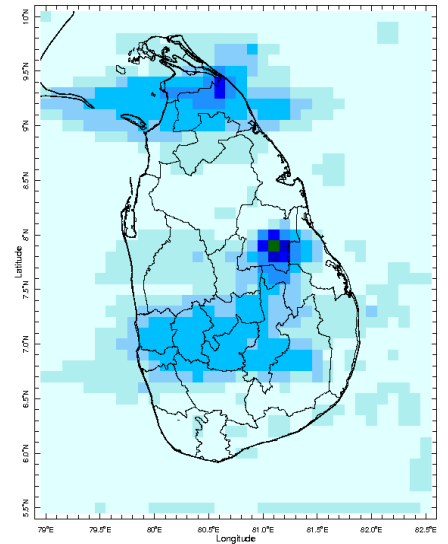
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



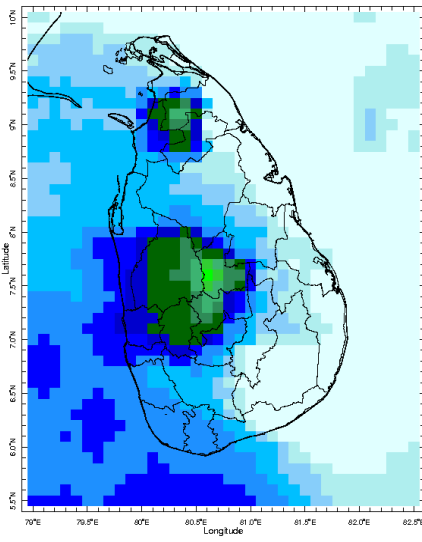
1 Jul 2021



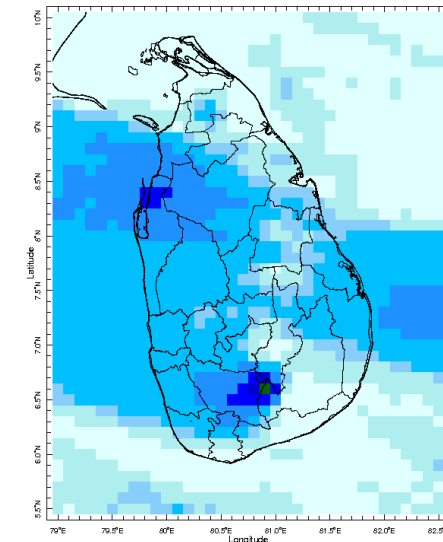
2 Jul 2021



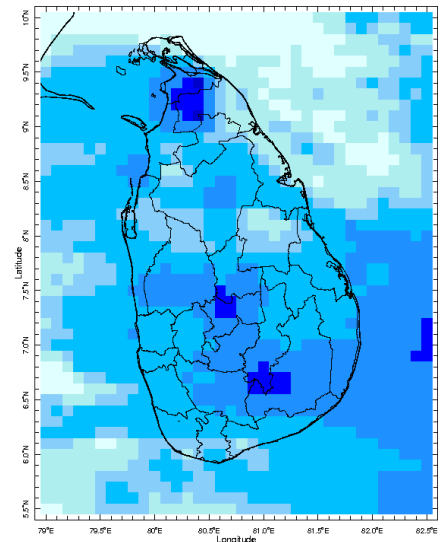
3 Jul 2021



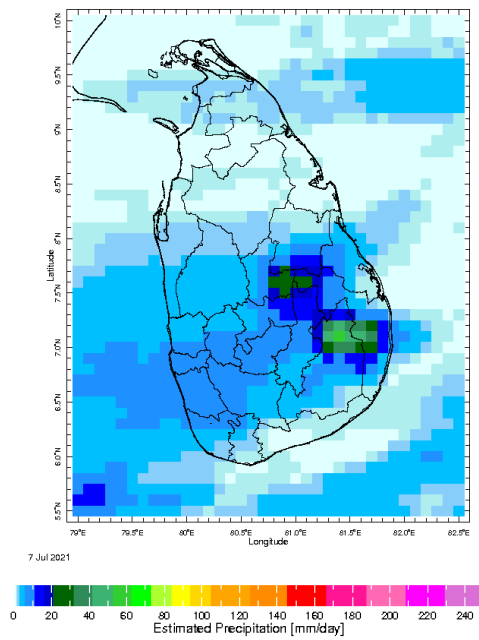
4 Jul 2021



5 Jul 2021

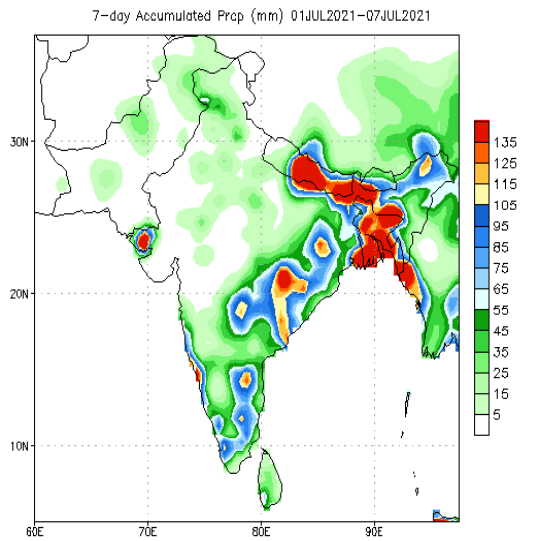


6 Jul 2021

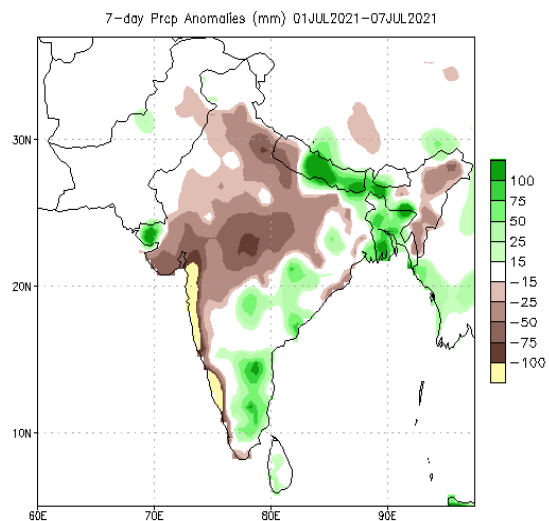
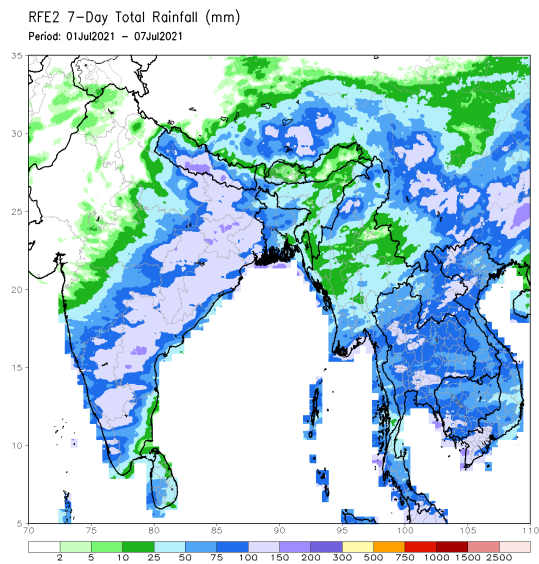


Weekly Rainfall Monitoring

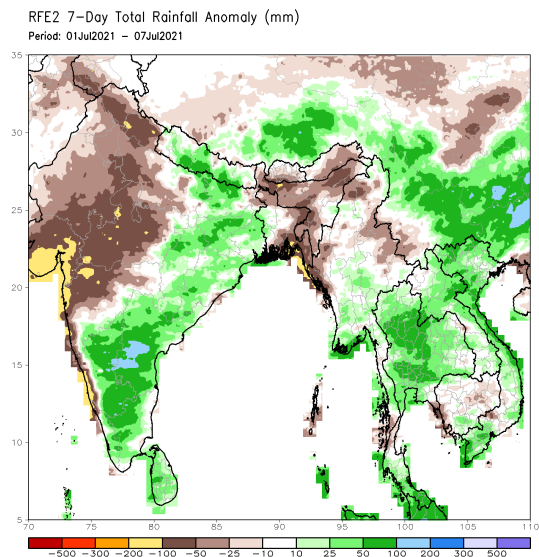
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite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



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

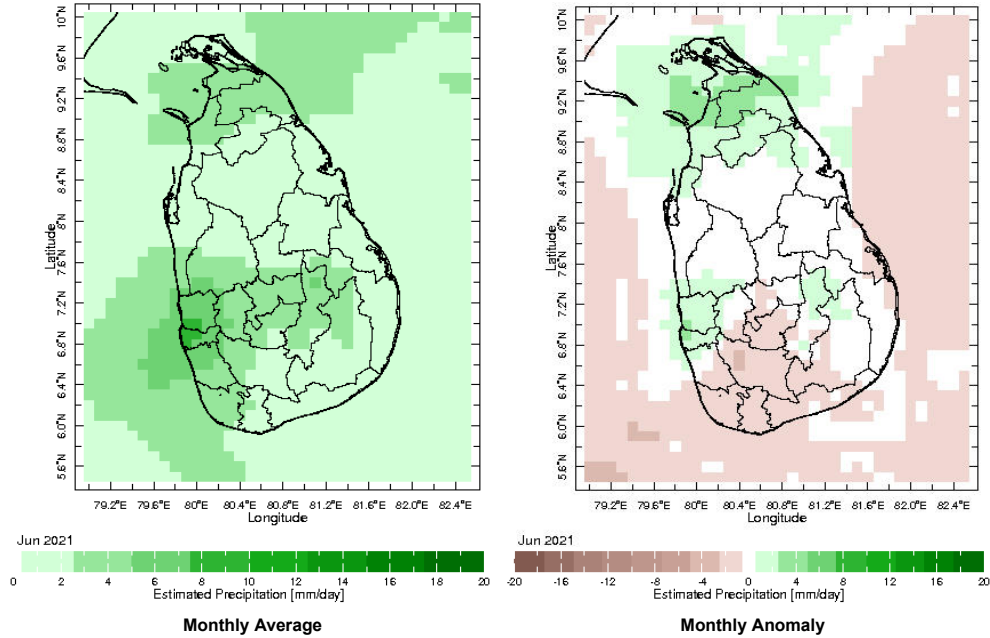


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

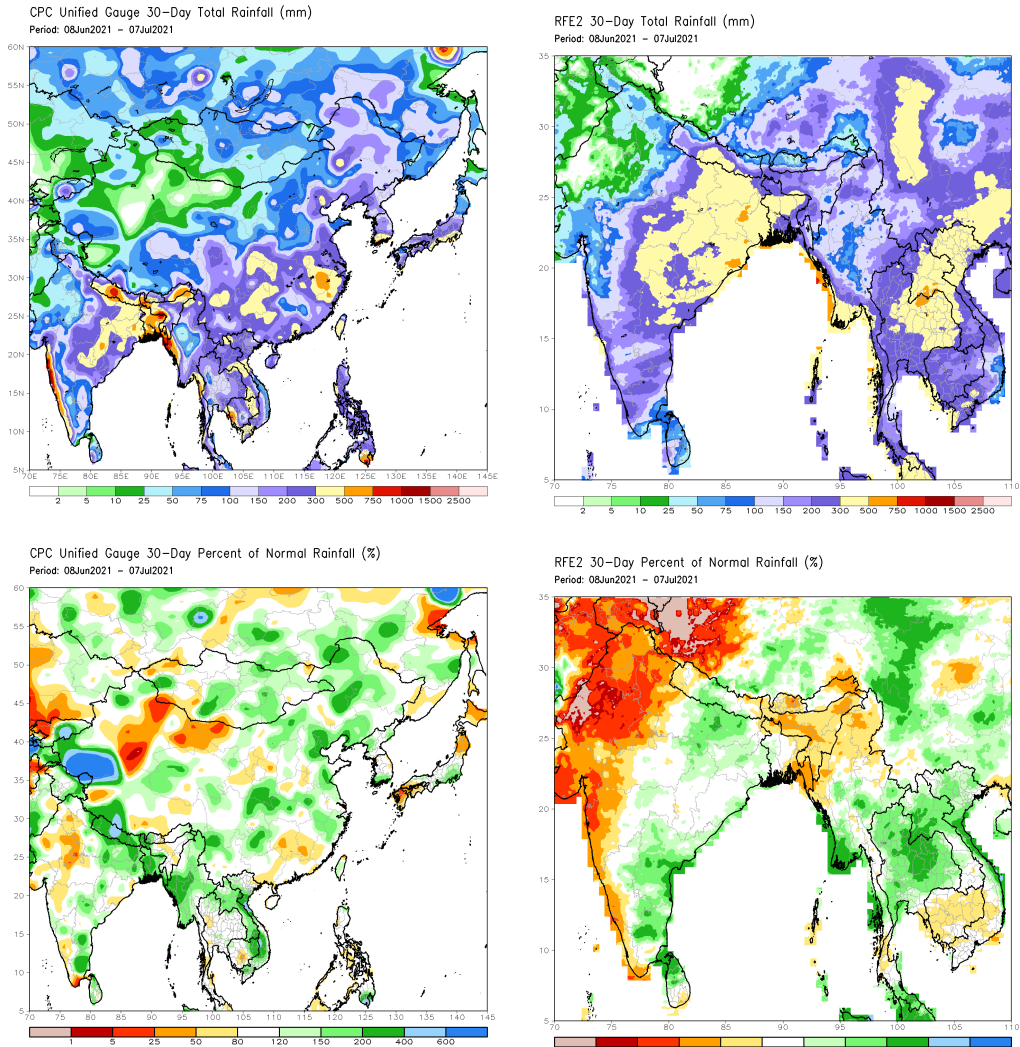


Monthly Rainfall Monitoring

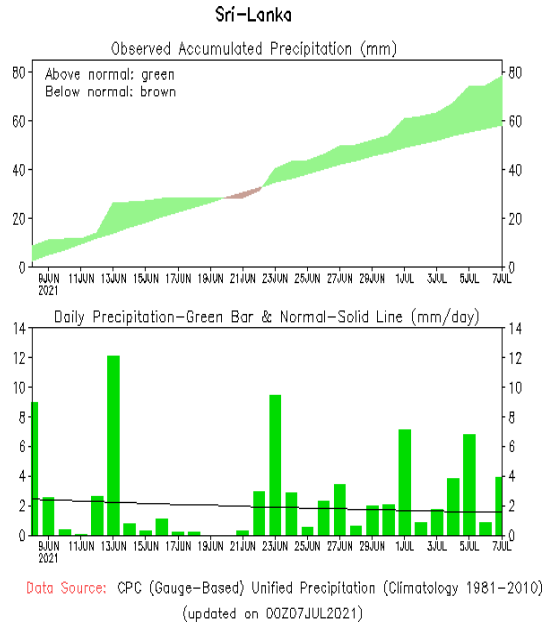
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



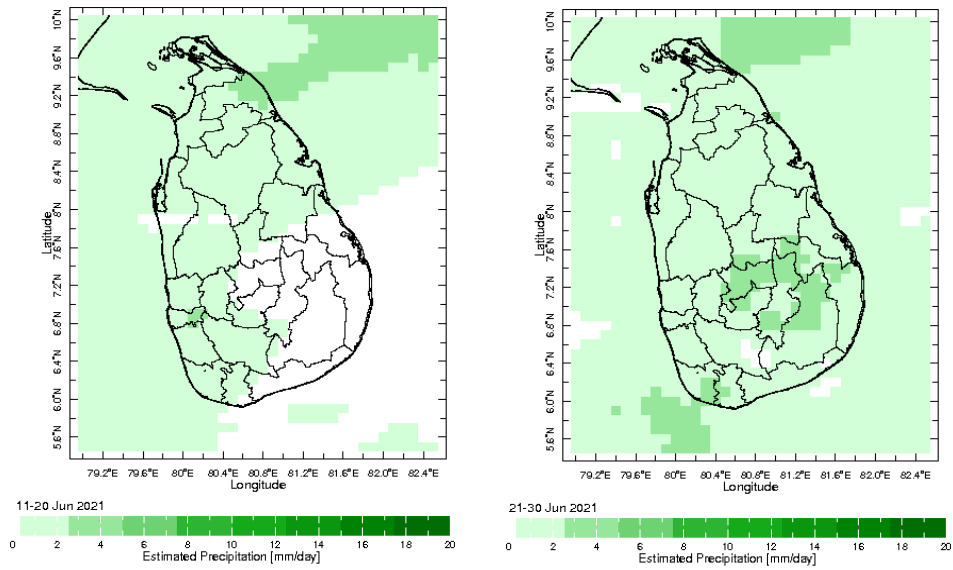
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



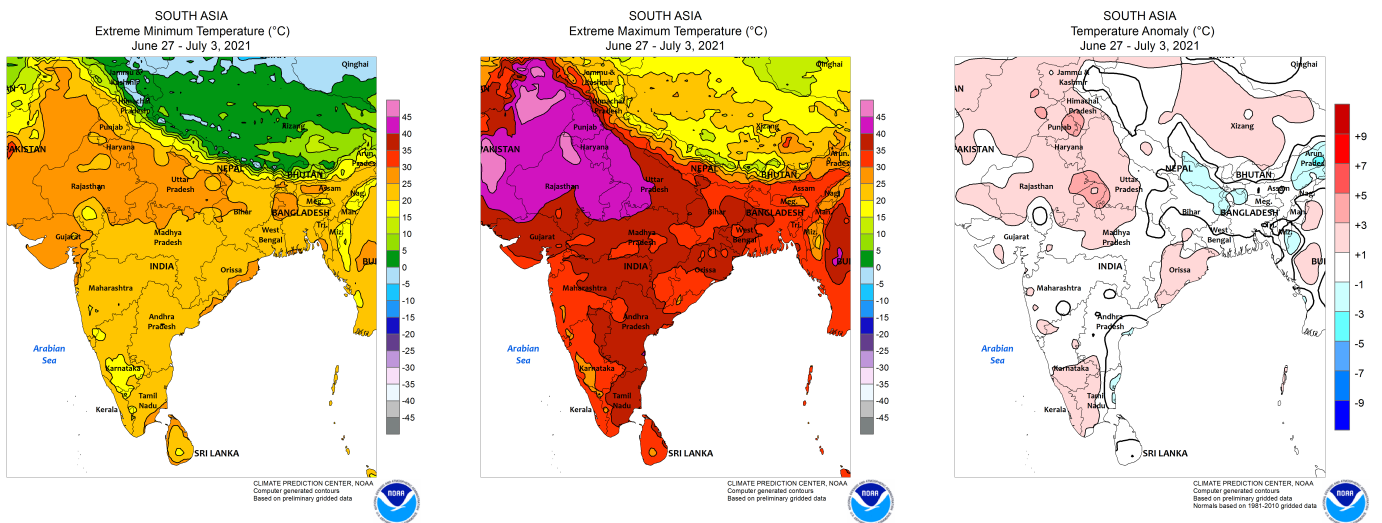
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

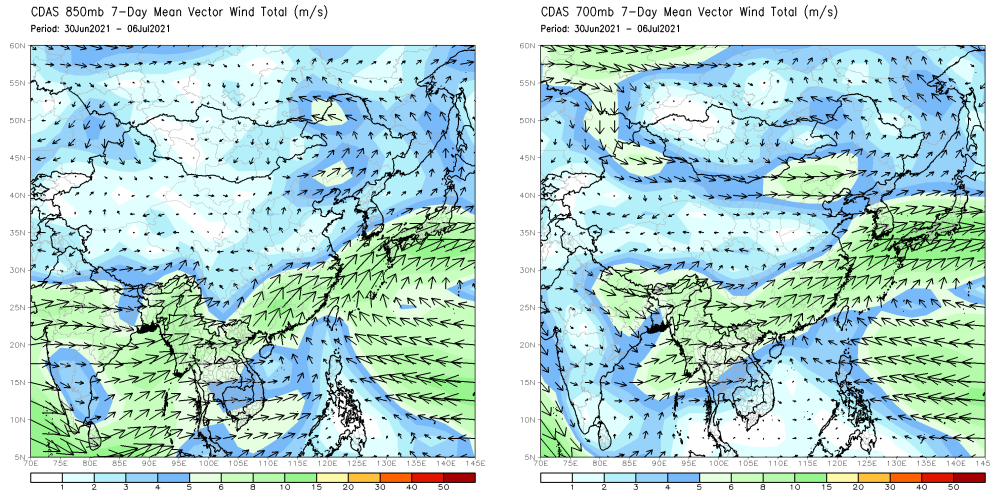


Weekly Temperature Monitoring



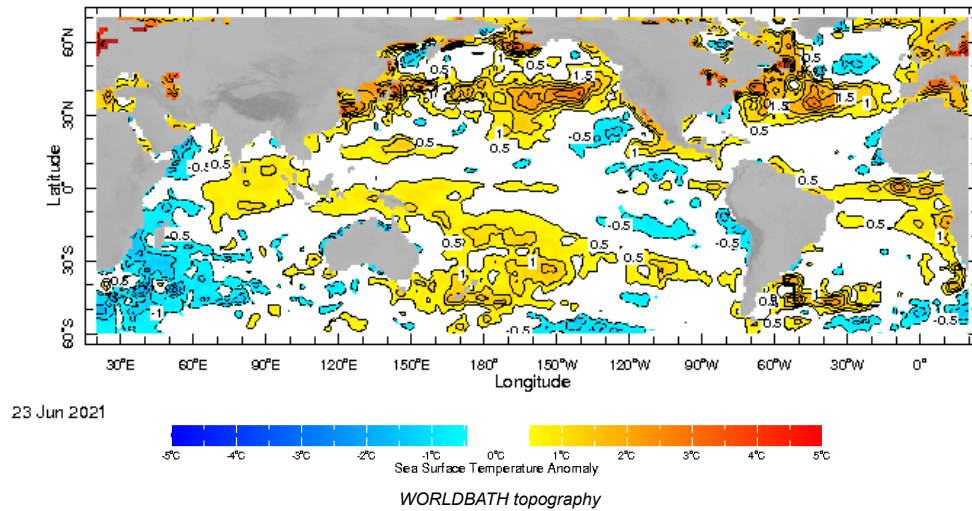
Weekly Wind Monitoring

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.

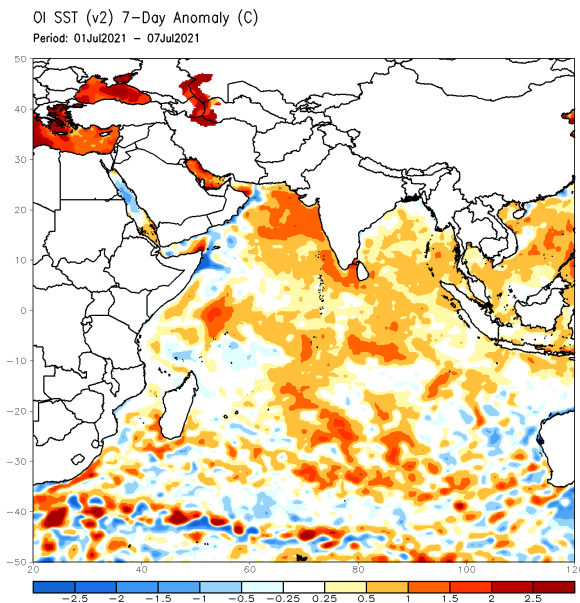


Weekly Average SST Anomalies

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

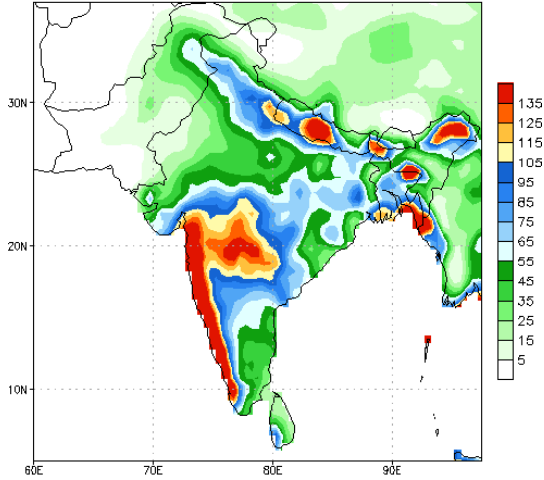


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



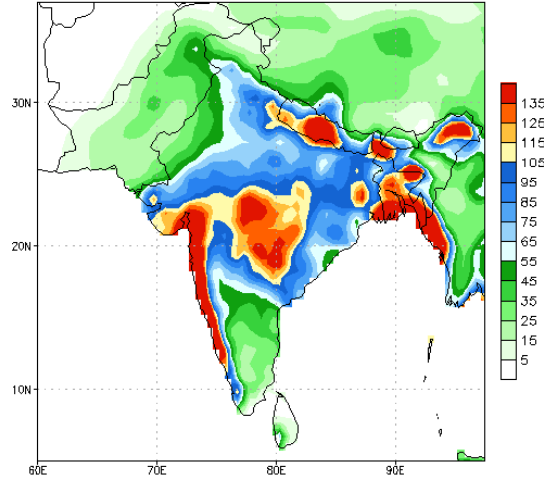
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 08Jul2021
06Jul2021-14Jul2021 Accumulation



Bias correction based on last 30-day forecast error

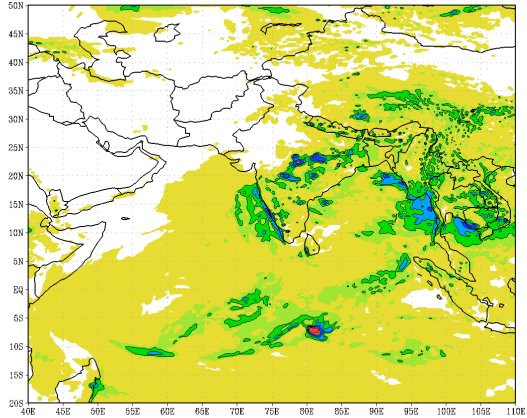
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 08Jul2021
15Jul2021-21Jul2021 Accumulation



Bias correction based on last 30-day forecast error

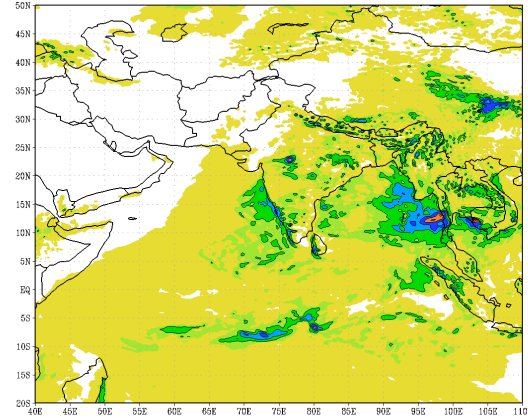
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 08-07-2021 valid for 03 UTC of 09-07-2021



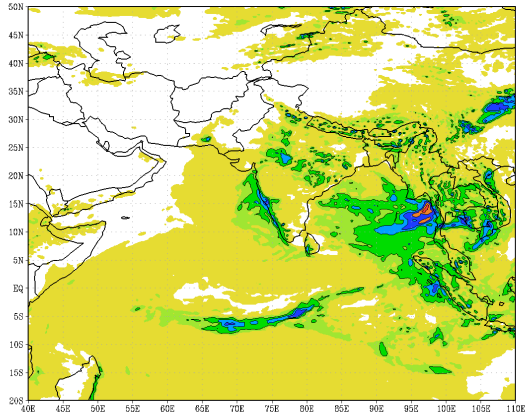
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 08-07-2021 valid for 03 UTC of 10-07-2021



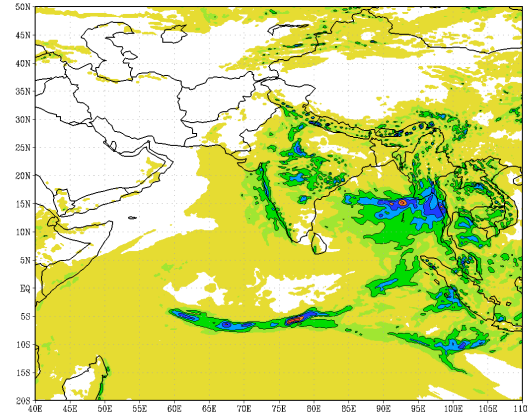
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 08-07-2021 valid for 03 UTC of 11-07-2021

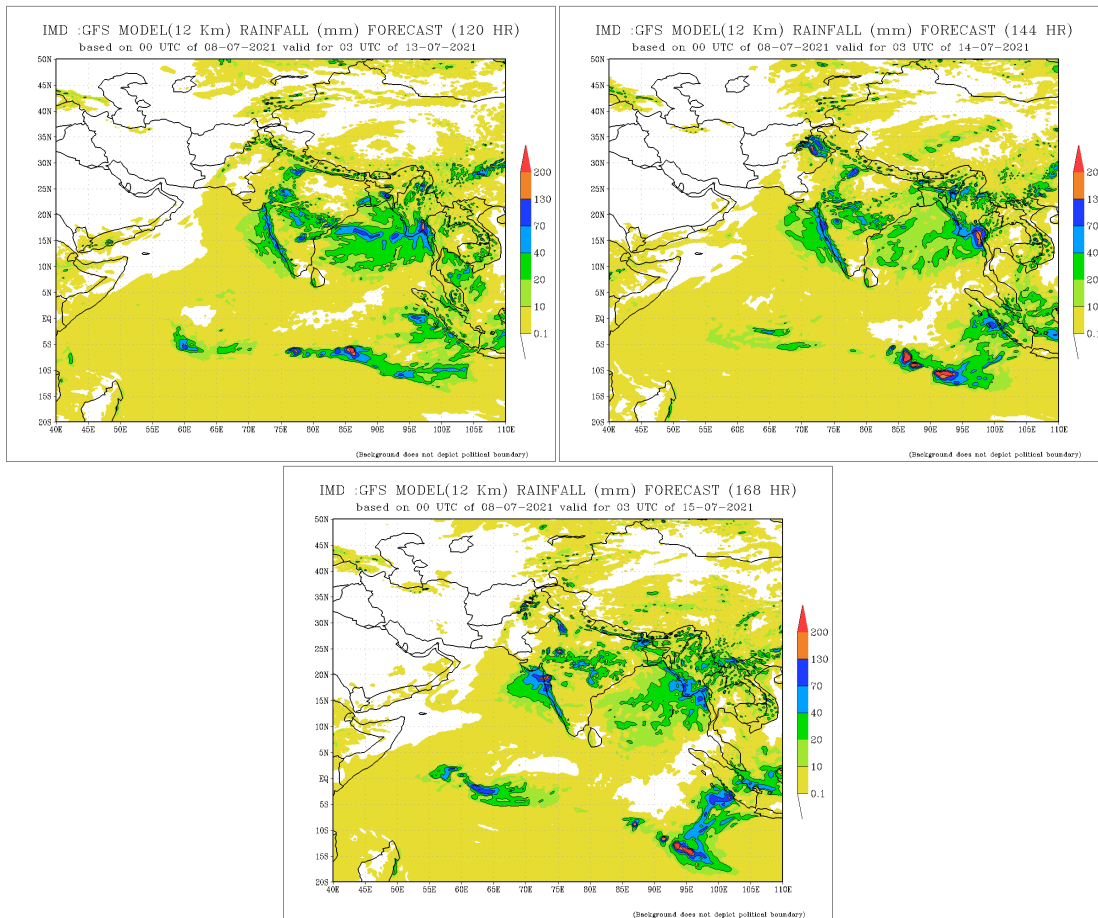


(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 08-07-2021 valid for 03 UTC of 12-07-2021

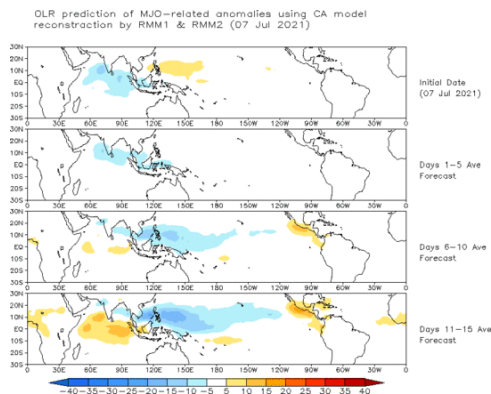


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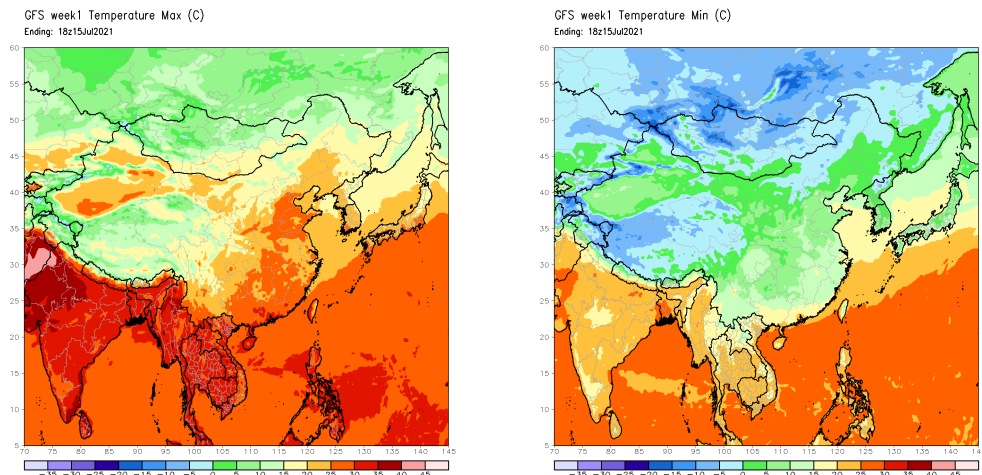
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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.



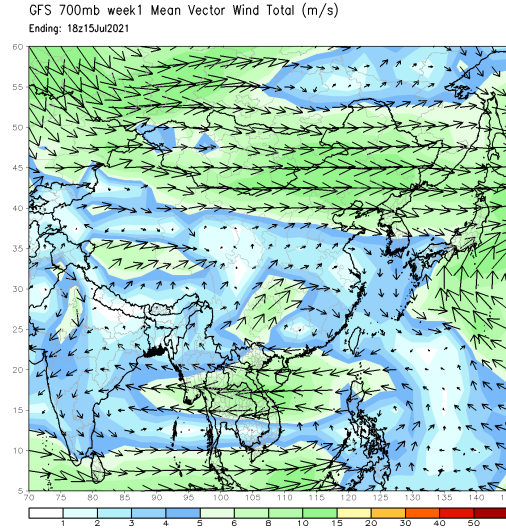
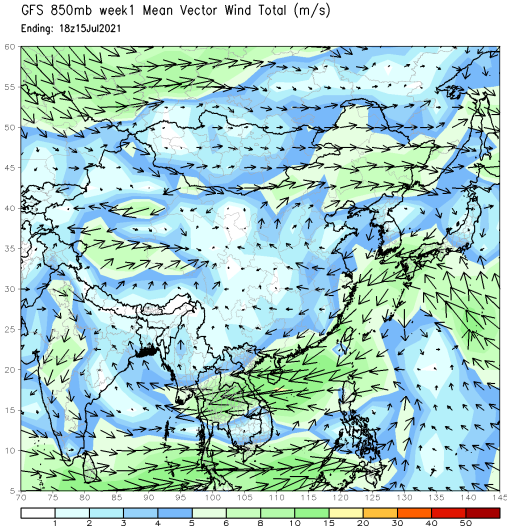
Weekly Temperature Forecast

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



Weekly Wind Forecast

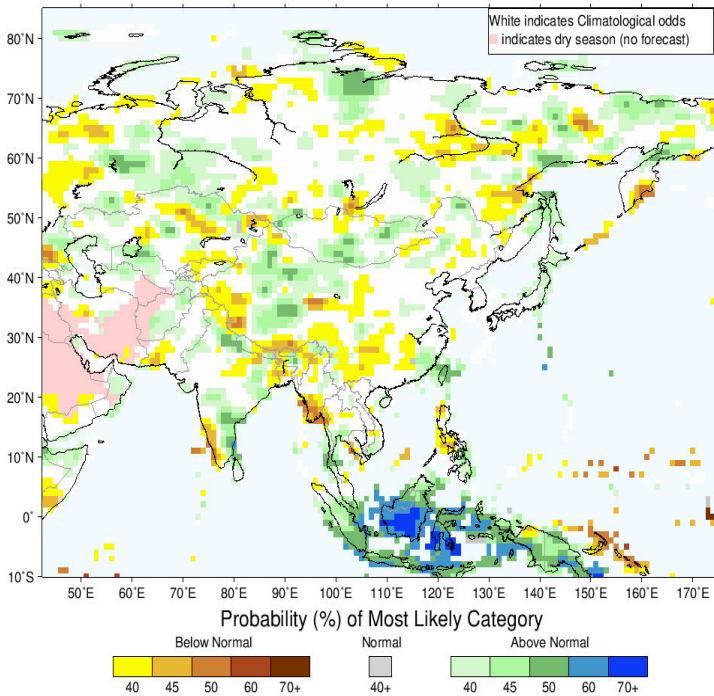
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



Seasonal Rainfall and Temperature Forecast

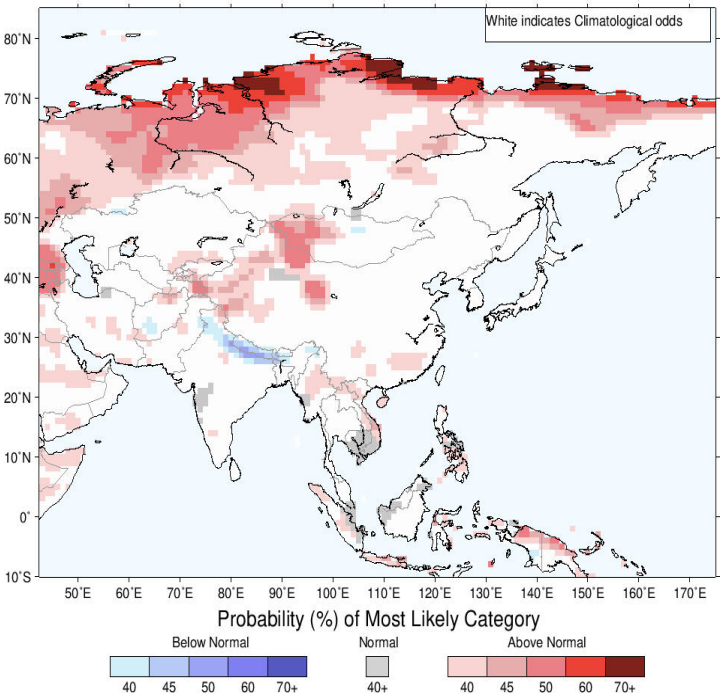
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile 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 July–August–September 2021, Issued June 2021



Precipitation Forecast

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



Temperature Forecast

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