

**Week of
16 - 23 July
2021**

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

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HIGHLIGHTS

Rainfall Prediction



- Showers are predicted in Western & Sabaragamuwa provinces during 16th-20th Jul; Also during 21st-27th for the same regions.

Monitored Rainfalls



- Dangerously heavy rainfalls were experienced in the Sabaragamuwa, Central & Southern provinces with max of 271 mm in Ratnapura district on 9th July.

Monitored Wind



- From 6th- 12th July: up to 15 km/h from the West and South were experienced over the island.

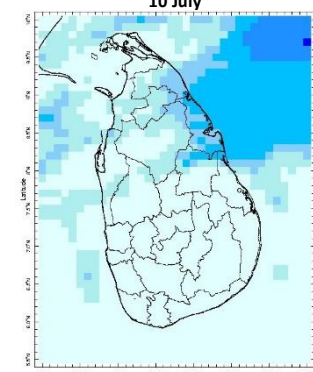
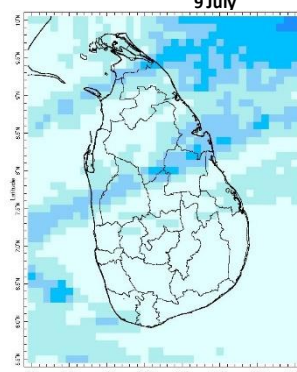
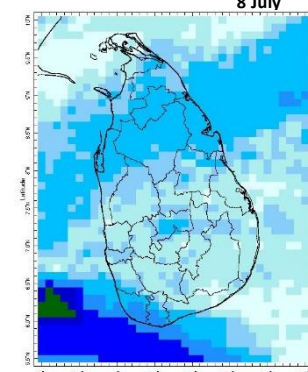
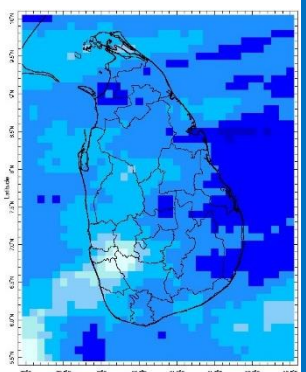
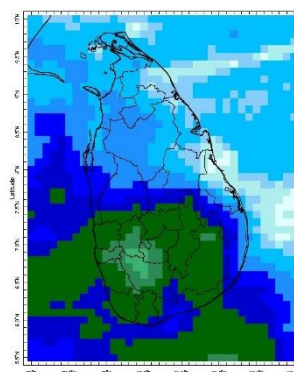
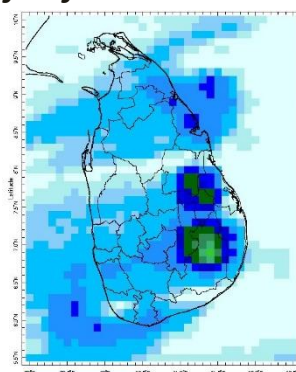
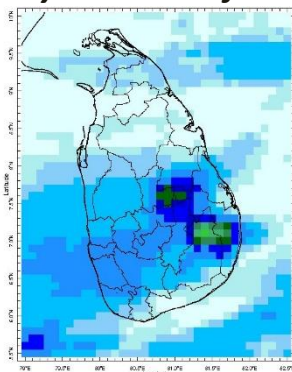
Monitored Sea Surface



- Sea surface temperature was observed around 0.5°C above average around the island.

**Monitoring
Rainfall**

Daily Estimates for Rainfall from 7th – 13th 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
100 - 150 mm	Colombo, Kalutara, Galle, Matara, Ratnapura
75 – 100 mm	Gampaha, Kegalle, Hambantota, Nuwara Eliya, Kandy, Matale, Moneragala, Badulla, Ampara, Trincomalee
50 – 75 mm	Puttalam, Kurunegala, Batticaloa, Polonnaruwa, Anuradhapura, Vavuniya, Mannar, Mullaitivu, Kilinochchi
25 – 50 mm	Jaffna

Weekly Rainfall Anomalies by Districts:

Rainfall Excess

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

Monthly Monitoring

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

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

1st– 10th July:

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



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Ocean State (Text Courtesy IRI)

Pacific sea state: July 7, 2021

Equatorial SSTs were below average in parts of the eastern Pacific Ocean and near average across the rest of the Pacific Ocean in early-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 around 0.5°C above average around the island.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 16th – 20th July:

Total rainfall by Provinces:

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

From 21st – 27th July:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall slightly enhance the rainfall during 16th - 17th Jul; neutral during 18th – 22nd Jul and slightly suppress during 23rd – 27th Jul.



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Interpretation

Monitoring

Rainfall: During the last two weeks, there had been Dangerously heavy rainfall over the following provinces: Sabaragamuwa, Central, Southern and Western

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

Temperatures: The temperature anomalies were near neutral during last week.

Predictions

Rainfall: During the next week (16th–20th July) showers are predicted for Western and Sabaragamuwa provinces; and in Kandy, Nuwara Eliya, Galle and Matara districts.

Temperatures: The temperature remains slightly normal for July. During 15th–23rd July, the temperature remains high especially the Eastern, Uva and North central 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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2. Predictions

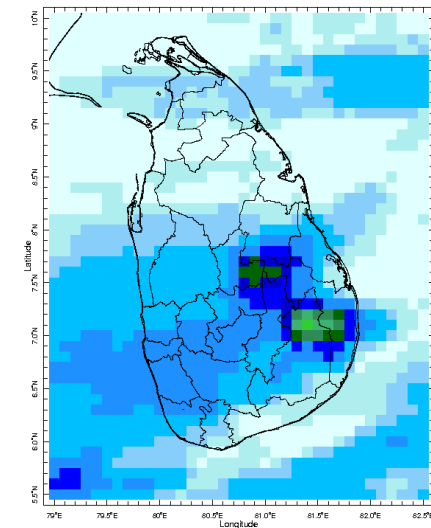
- NCEP GFS Ensemble 1-14 day Rainfall Predictions
- GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- MJO Related OLR Forecast
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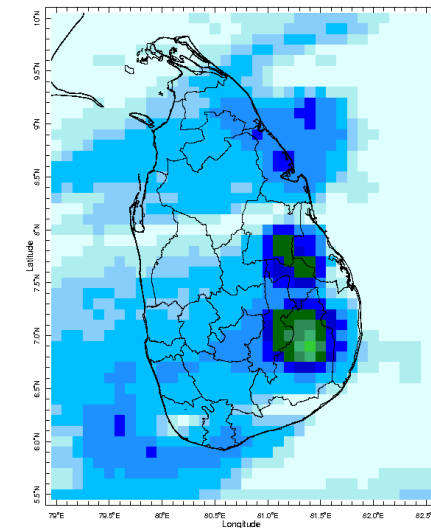
MONITORING

Daily Rainfall Monitoring

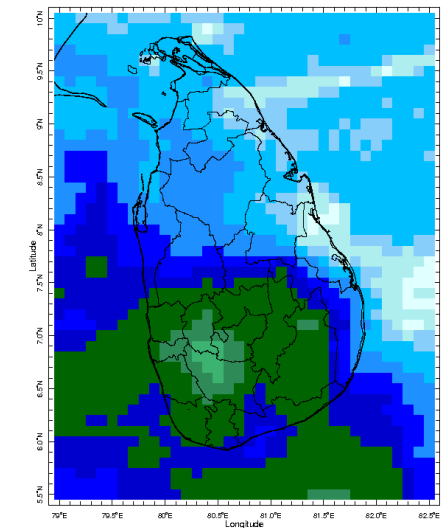
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



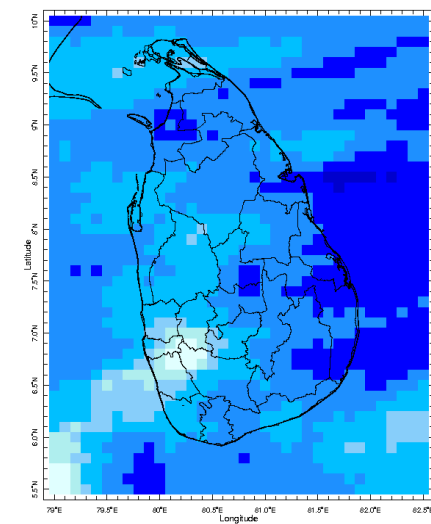
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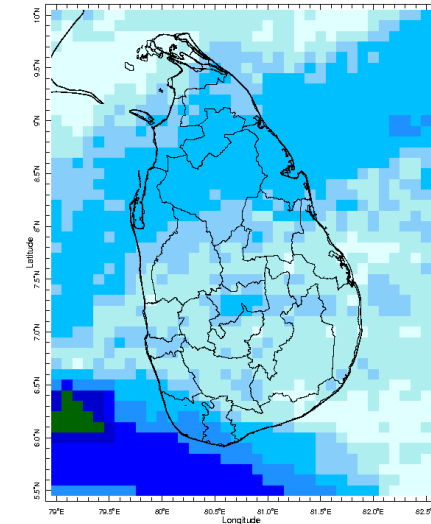
8 Jul 2021



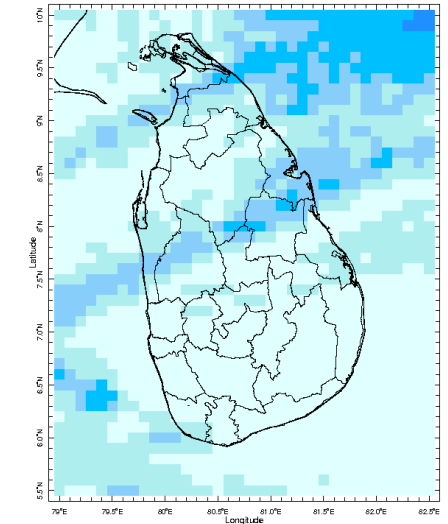
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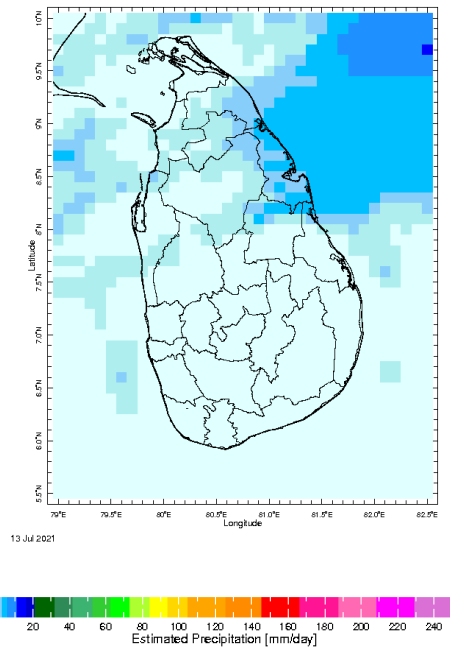
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11 Jul 2021

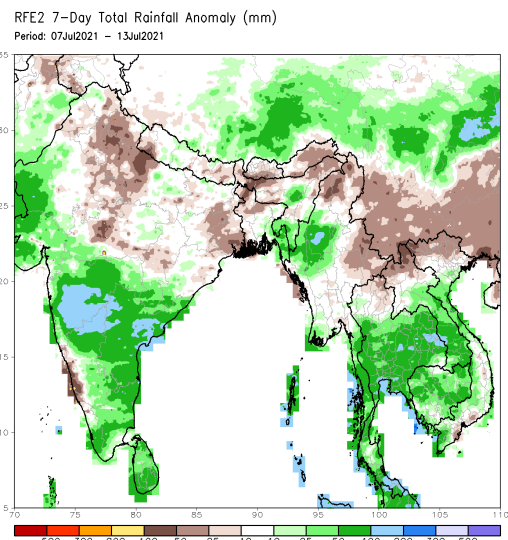
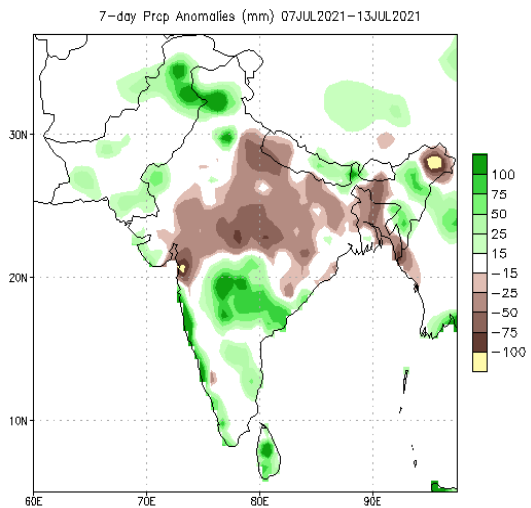
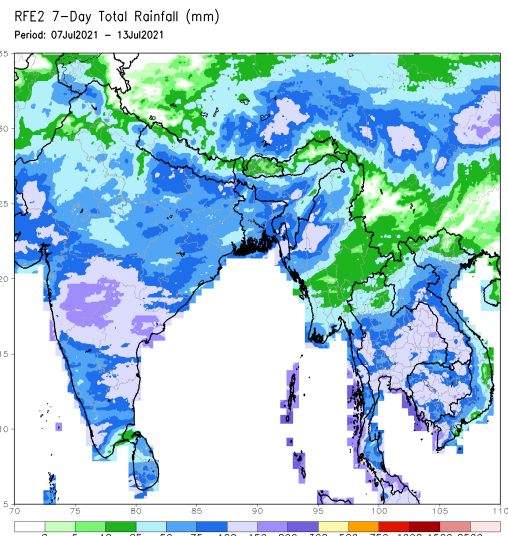
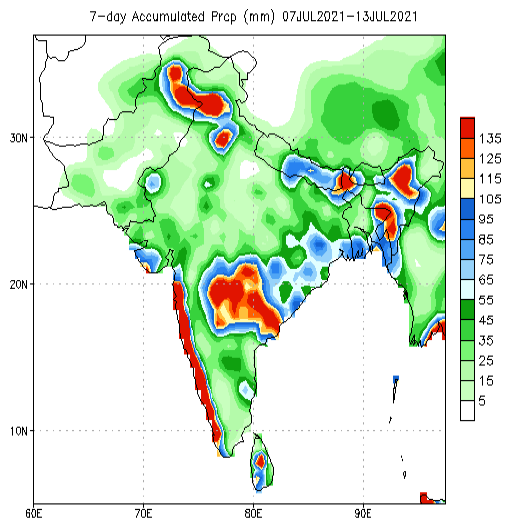


12 Jul 2021



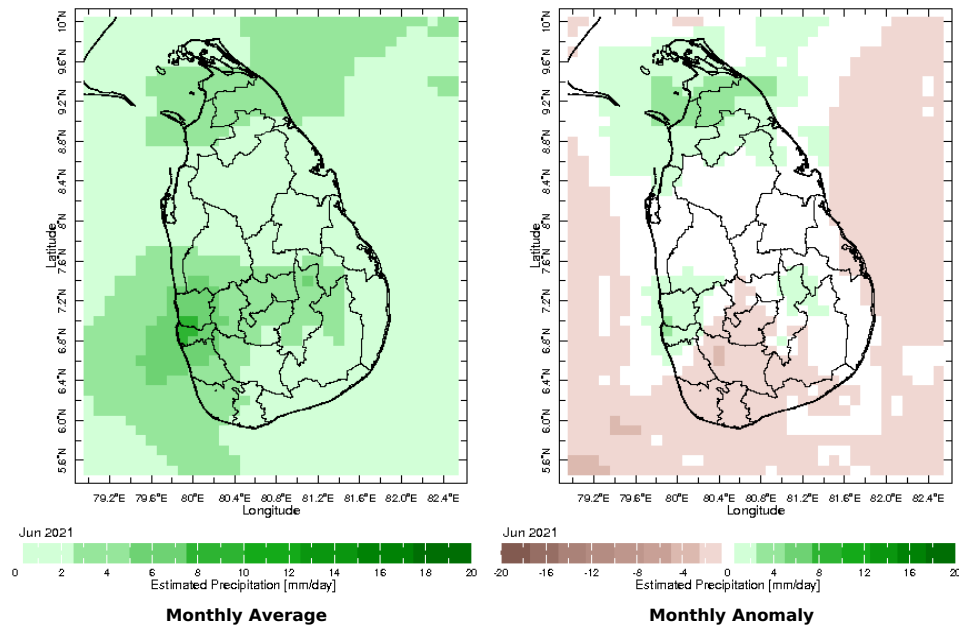
Weekly Rainfall Monitoring

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.

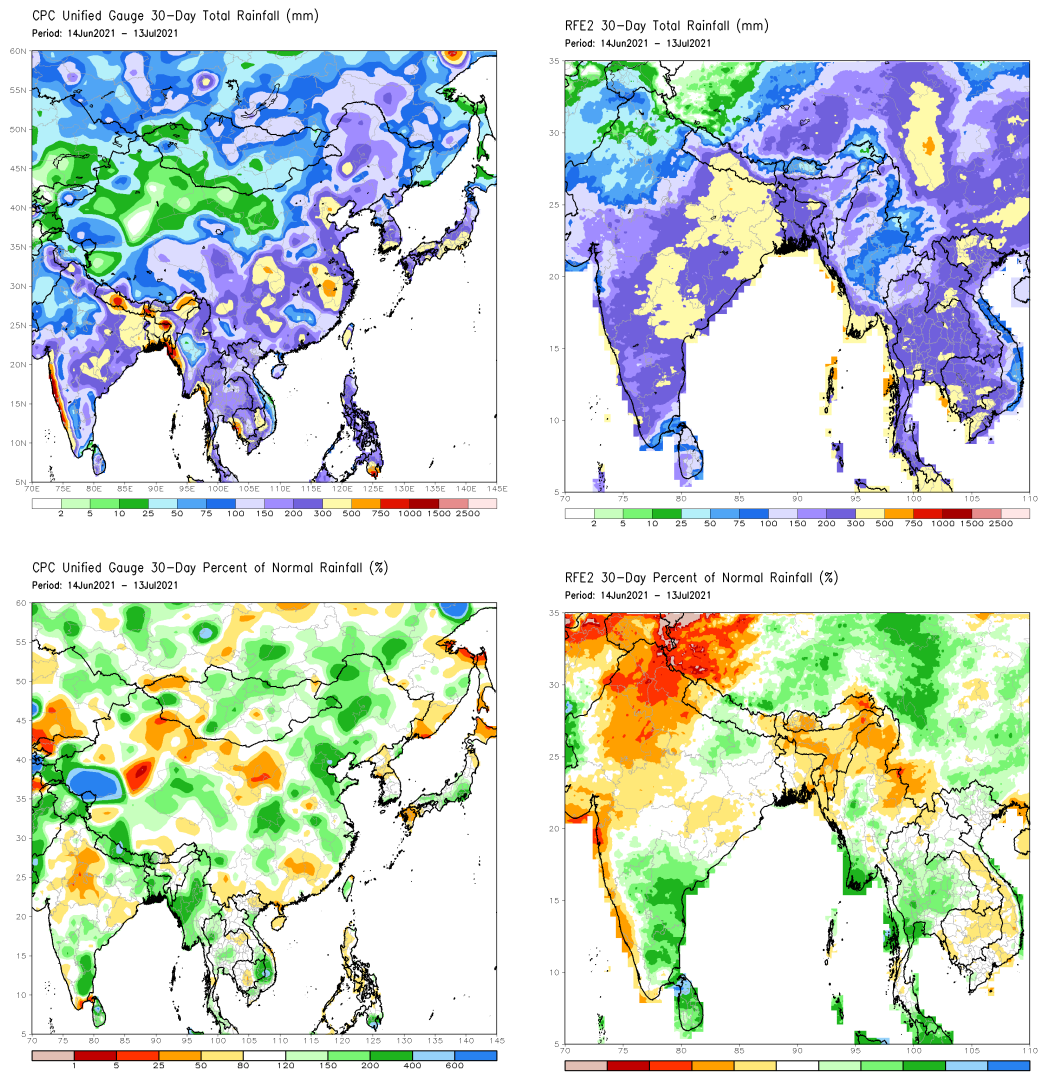


Monthly Rainfall Monitoring

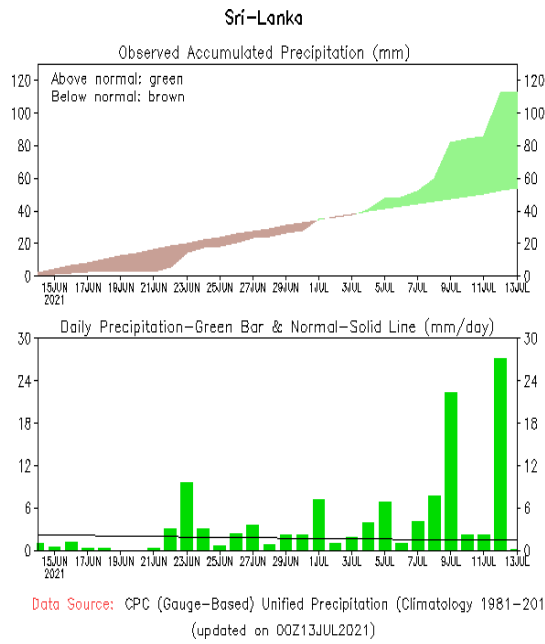
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



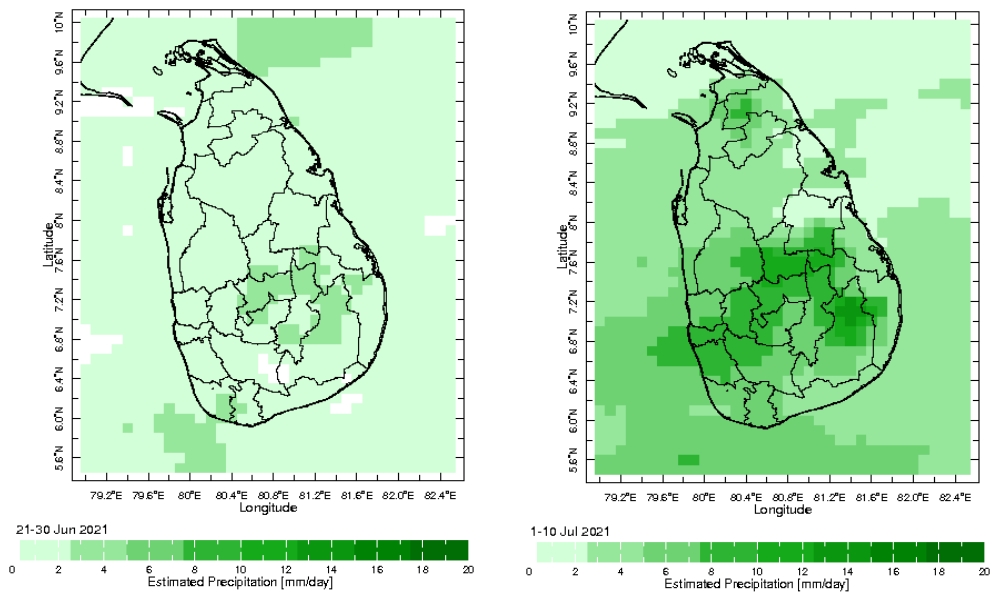
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



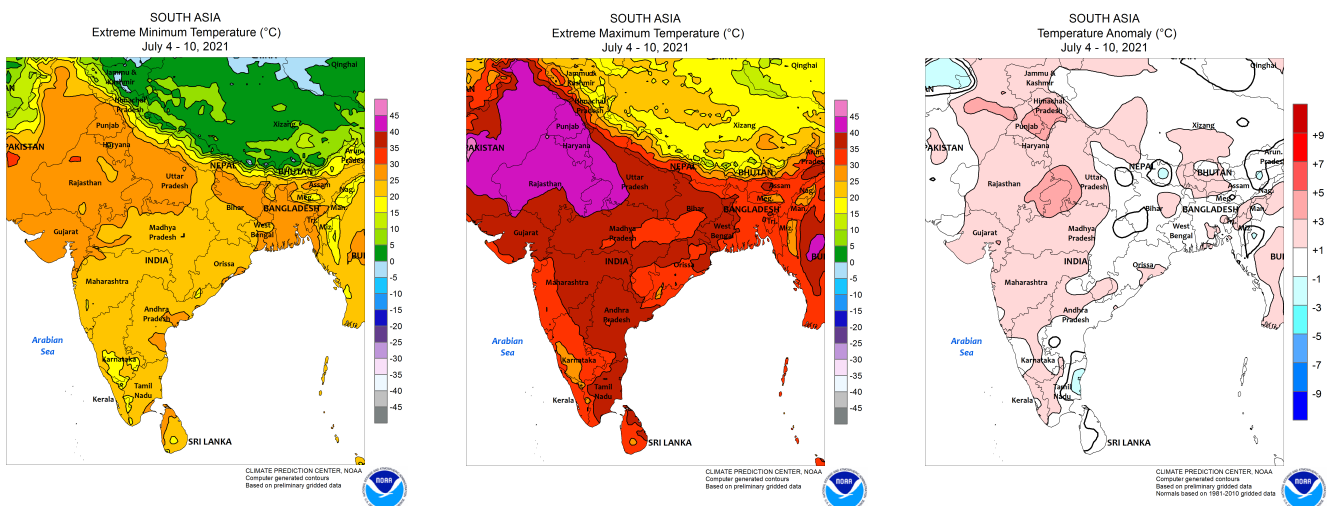
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

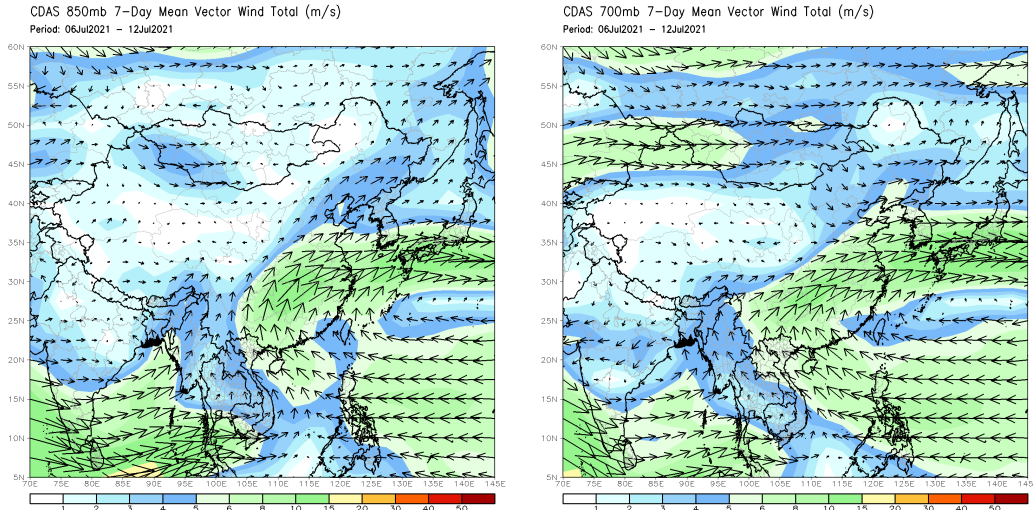


Weekly Temperature Monitoring



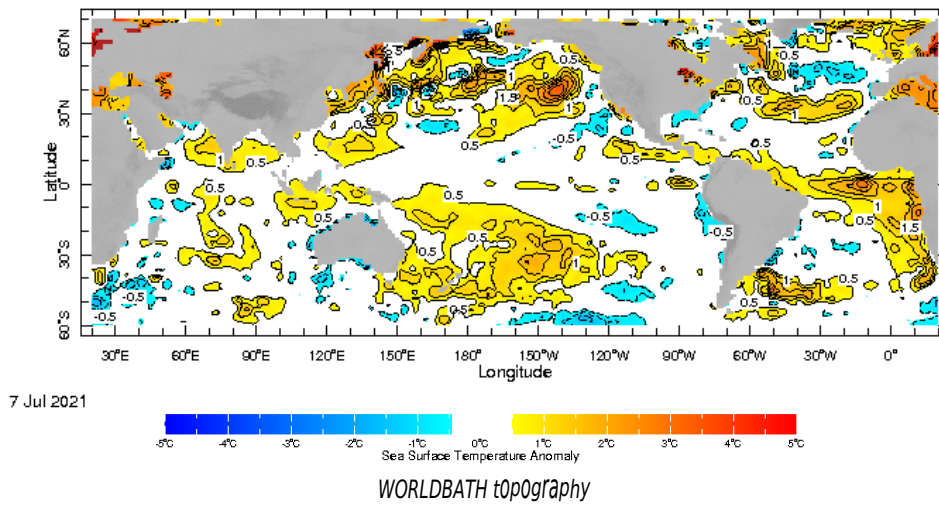
Weekly Wind Monitoring

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.

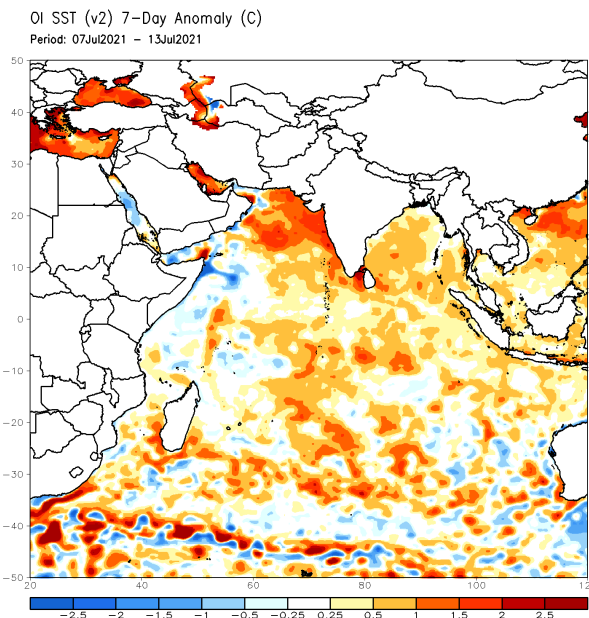


Weekly Average SST Anomalies

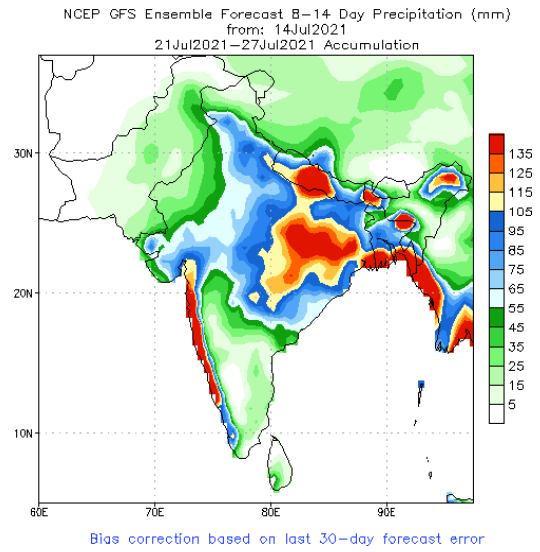
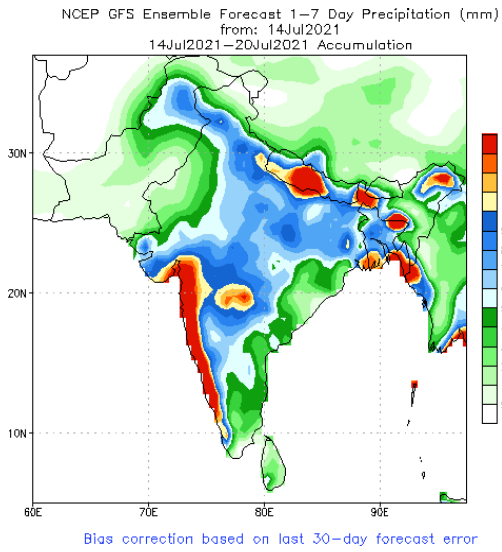
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



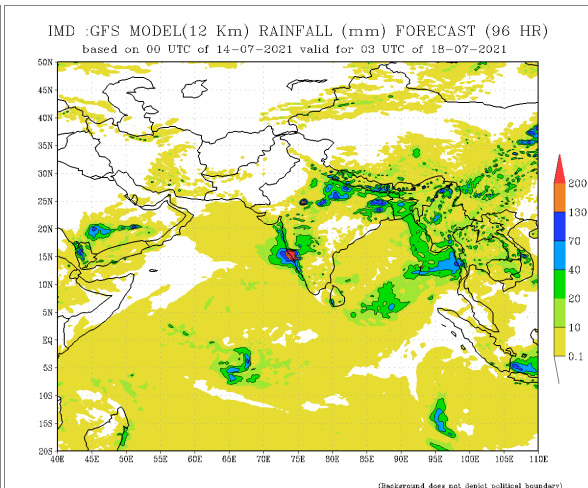
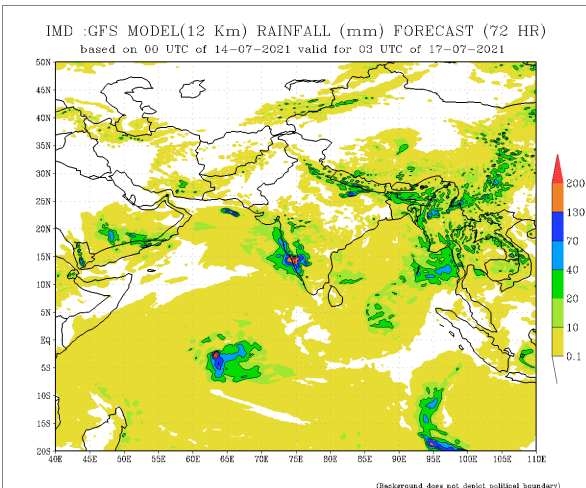
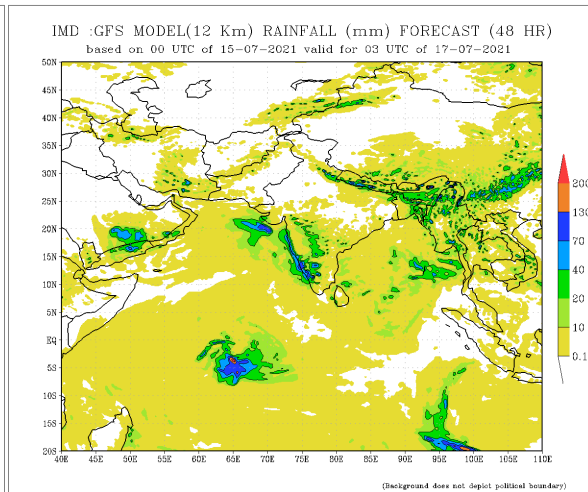
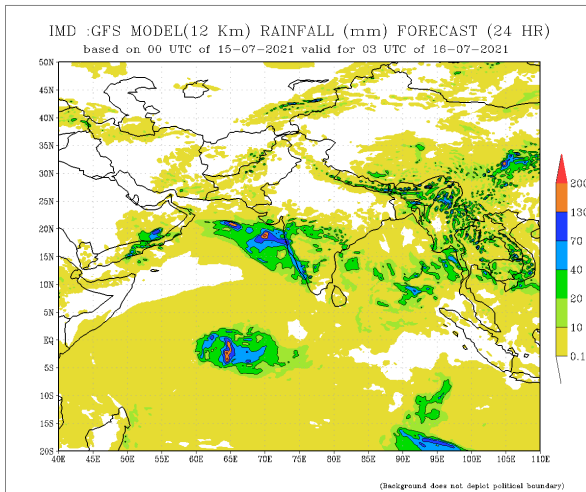
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

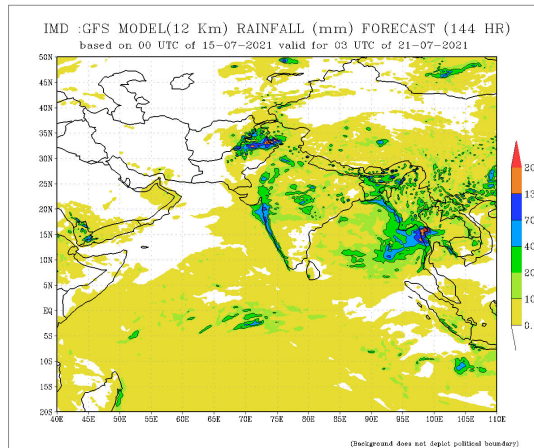
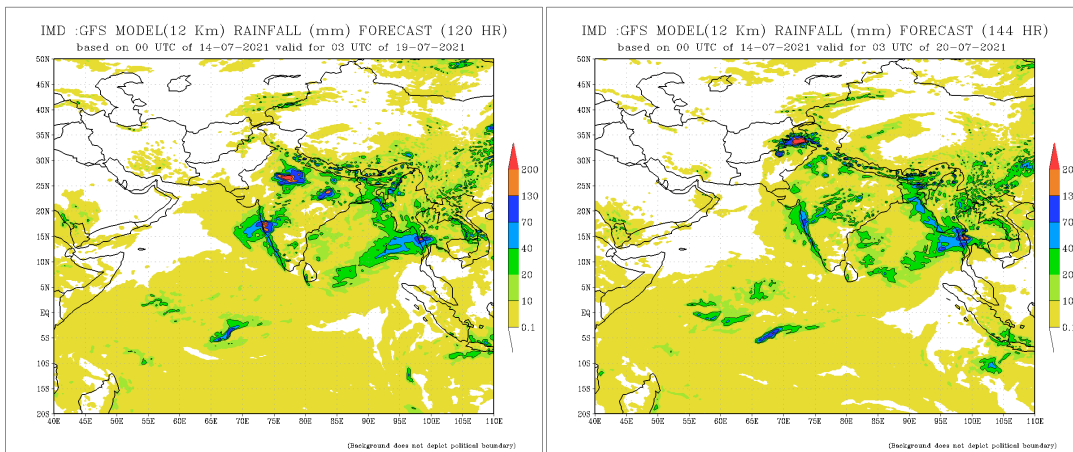


NCEP GFS 1- 14 Day prediction



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

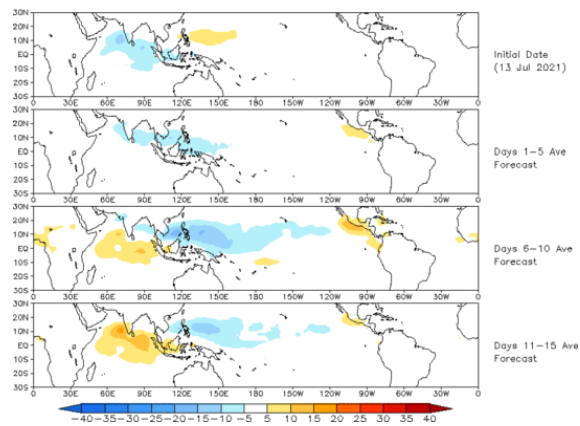




Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

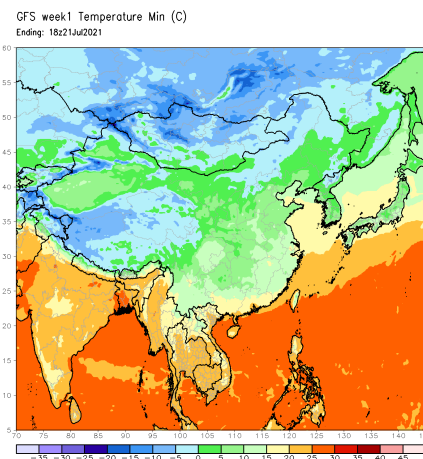
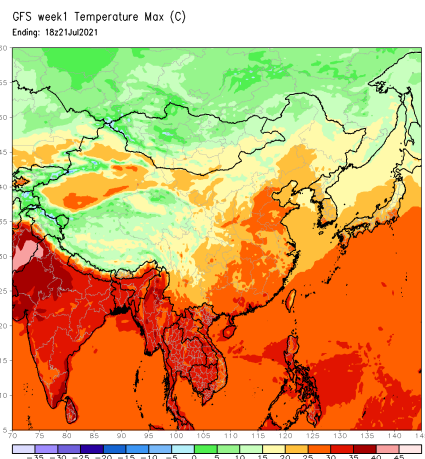
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated 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 (13 Jul 2021)



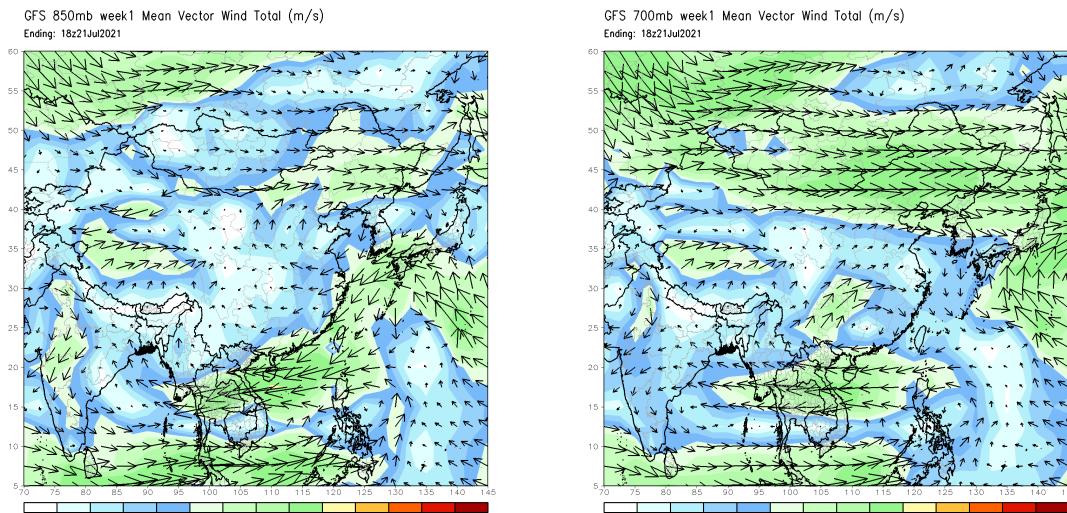
Weekly Temperature Forecast

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



Weekly Wind Forecast

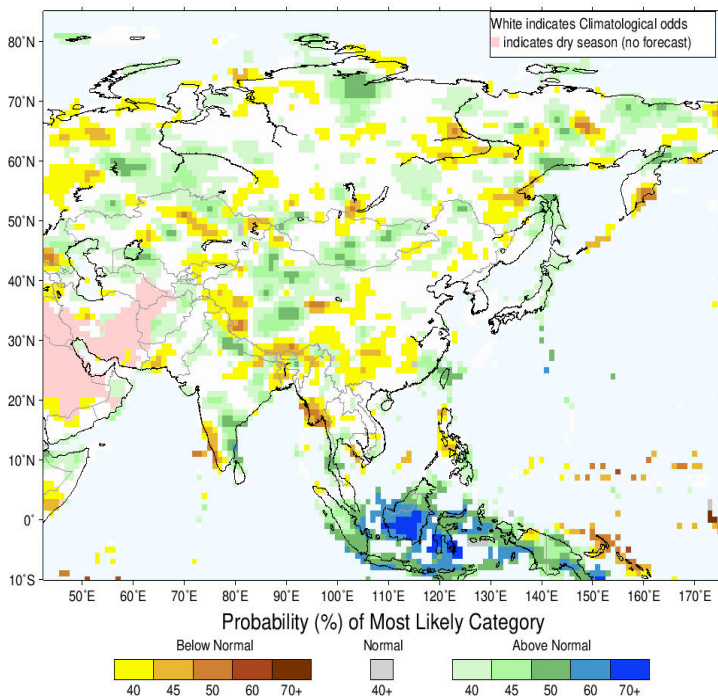
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



Seasonal Rainfall and Temperature Forecast

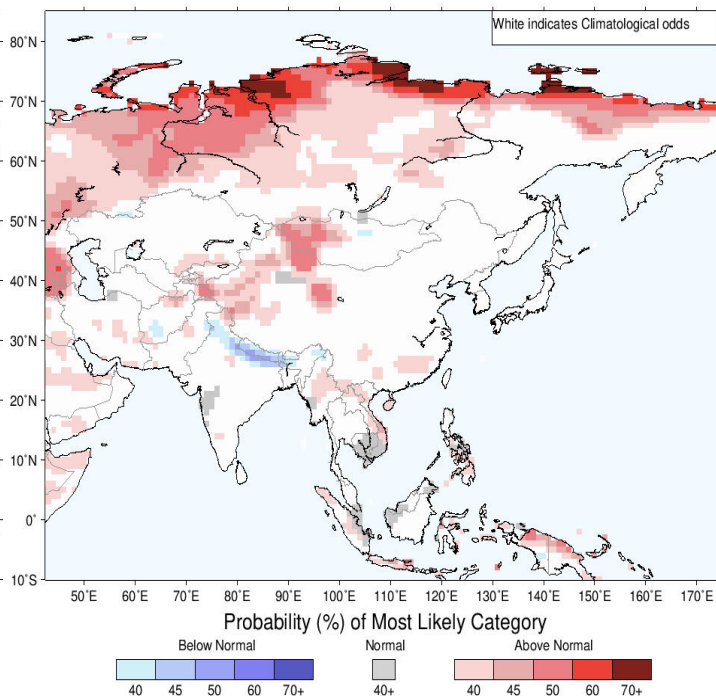
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant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