

**Week of
28 May - 4 June
2021**

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

By: Nipuni Alahakoon, Sanduni Gammanpila, Ushan Adithya, Azra Munas, Tuan Hadgie, Lareef Zubair and Michael Bell¹ (FECT and IRI¹)

HIGHLIGHTS

Rainfall Prediction



- Showers of 125 mm expected in Western, Sabaragamuwa during 28th May – 2nd June and 145 mm North Western, Western, Sabaragamuwa, Southern in 3rd - 9th June

Monitored Rainfalls



- Last week was wetter than normal in most of SL. Thundershowers in Central province with a maximum of 188.5 mm in Kandy on 24th May.

Monitored Wind



- From 19th - 25th May: up to 15 km/h from the West and South were experienced. Due to a deep depression located in East Central Bay of Bengal that intensified into a cyclonic storm ("YAAS") on May 24th around 05:30 a.m.

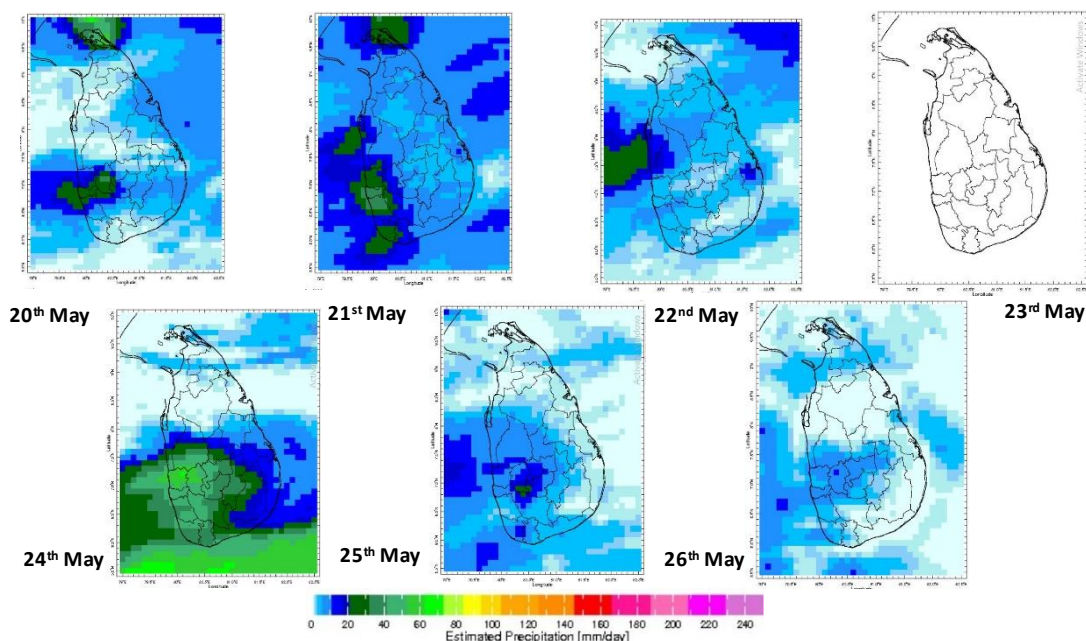
Monitored Sea Surface



- Sea surface temperature was observed around 0.5°C above average around the island. The SST in the Arabian Sea has dropped after the heavy rainfall last week.

Monitoring Rainfall

Daily Estimates for Rainfall from 20th – 26th May





Federation for Environment, Climate and Technology

c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.

Phone (+94) 81-2376746, (+94) 81-2300415

E mail: fectsl@gmail.com

Web Site <http://www.climate.lk>

Total Rainfall for the Past Week

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

Rainfall	Districts
150 – 200 mm	Puttalam, Kurunegala, Kegalle, Ratnapura, Gampaha, Kandy, Kalutara
100 – 150 mm	Kandy, Nuwara Eliya, Galle, Matara,
75 – 100 mm	Badulla, Moneragala, Hambantota
50 – 75 mm	Jaffna, Kilinochchi, Mannar, Vavuniya, Mullaitivu, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloa, Matale
25 – 50 mm	Ampara

Weekly Rainfall Anomalies by Districts:

Rainfall Excess

Rainfall	Districts
100 – 200 mm	Puttalam, Kurunegala, Gampaha, Colombo, Kalutara, Kegalle, Ratnapura
50 – 100 mm	Jaffna, Kilinochchi, Mullaitivu, Mannar, Vavuniya, Trincomalee, Batticaloa, Anuradhapura, Matale, Kandy, Nuwara Eliya, Badulla, Galle, Matara
25 – 50 mm	Polonnaruwa, Ampara, Moneragala, Hambantota

Monthly Monitoring

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

1st– 10th May:

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

11th– 20th May:

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



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4 mm

Mannar

Ocean State *(Text Courtesy IRI)*

Pacific sea state: May 12, 2021

Equatorial SSTs were mostly below average from the east to the Middle West Pacific Ocean in mid-May and most key atmospheric variables were either ENSO –Neutral or consistent with continued La Niña conditions. A large majority of the model forecasts predict SSTs to be cooler than the threshold of La Niña SST conditions through the winter, dissipating during spring.

Indian Ocean State

Sea surface temperature was observed around 0.5°C above average around the island. The SST in the Arabian Sea has dropped after the heavy rainfall last week.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 28th May – 2nd June:

Total rainfall by Provinces:

Rainfall	Provinces
125 mm	Western, Sabaragamuwa
115 mm	North Western, Southern
95 mm	Central
55 mm	Uva
45 mm	North Central, Eastern
25 mm	Northern

From 3rd – 9th June:

Total rainfall by Provinces:

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



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MJO based OLR predictions

For the next 15 days:

MJO shall slightly suppress the rainfall during 26th May – 4th June and extremely high rainfall above 140 mm is expected during 5th – 9th June.

Interpretation Monitoring

Rainfall: During the last two weeks, there had been high rainfall over the following provinces: Western and Sabaragamuwa

Wind: West and South winds prevailed in the sea area and around the island. Due to a deep depression located in East Central Bay of Bengal that intensified into a cyclonic storm ("YAAS") on May 24th around 05:30 a.m.

Temperatures: The temperature anomalies were slightly above normal for the Central, Western, Southern and Sabaragamuwa provinces the last – driven by the warm SST's.

Predictions

- **Rainfall:** During the next week (28th May – 2nd June) showers are predicted for Western and Sabaragamuwa and showers are predicted for North Western, Western, Sabaragamuwa and Southern region during 3rd – 9th June. Heavy showers or thundershowers with a sudden increase in wind speed in sea areas around the island during the June 3th -9th period

Temperatures: The temperature remains slightly normal for May. During 28th May – 4th June, the temperature remains high especially the Northern, North Central, North Western and Eastern region.

Teleconnections:

- MJO shall slightly suppress the rainfall during 26th May – 4th June and extremely high rainfall above 140 mm is expected during 5th – 9th June.
- 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

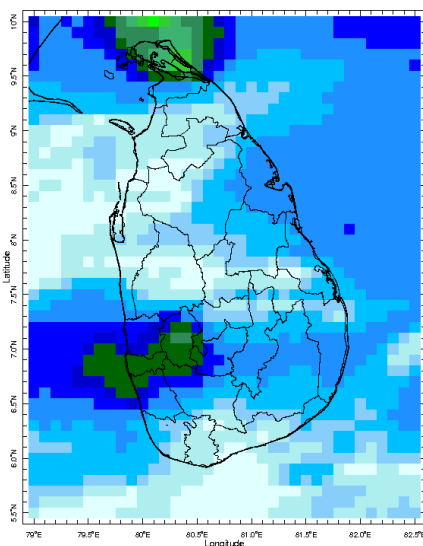
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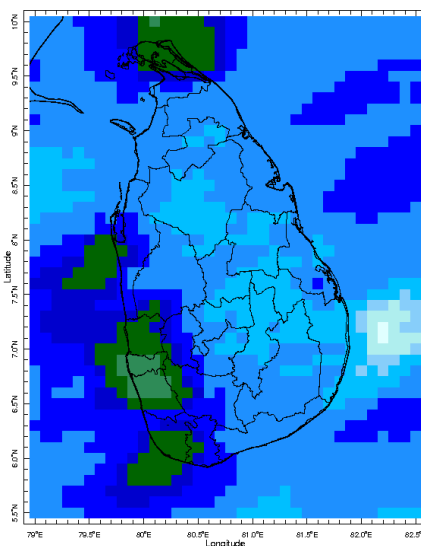
MONITORING

Daily Rainfall Monitoring

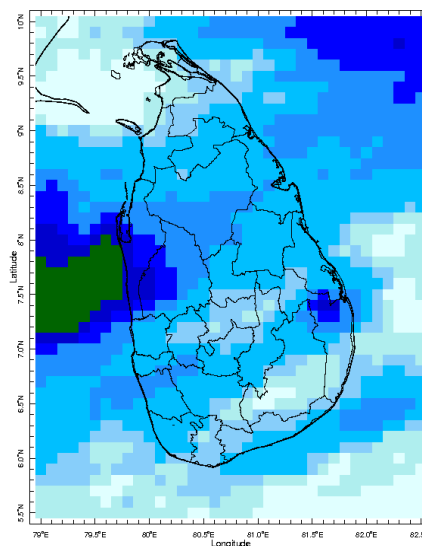
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



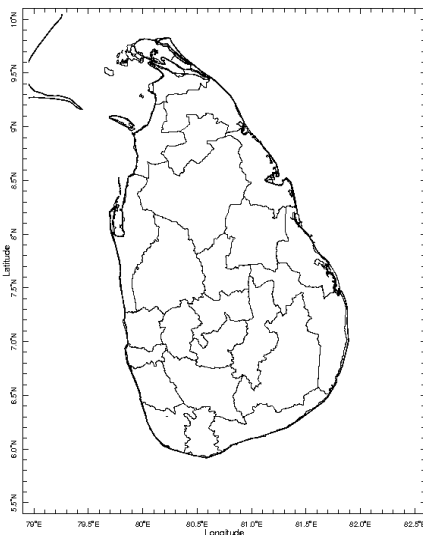
20 May 2021



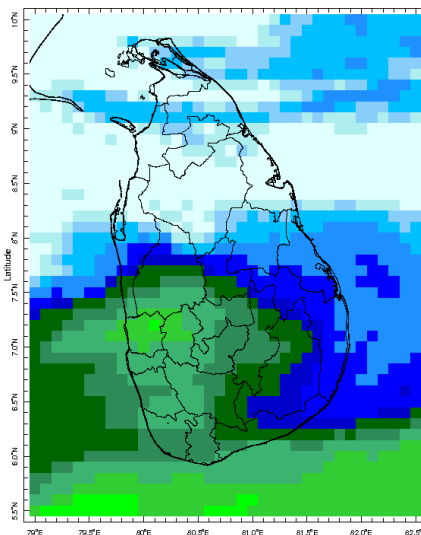
21 May 2021



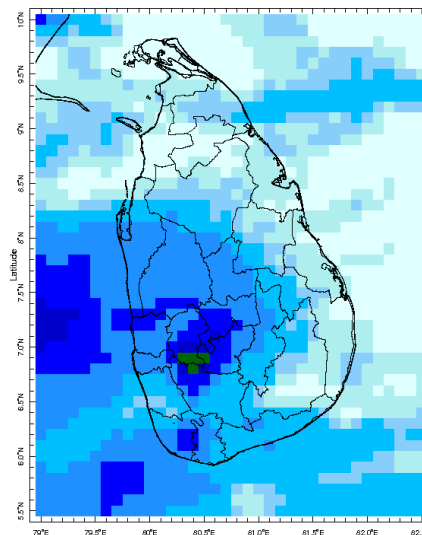
22 May 2021



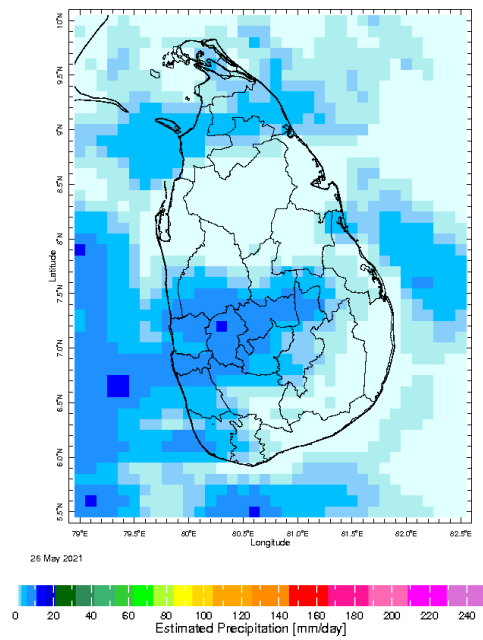
23 May 2021



24 May 2021

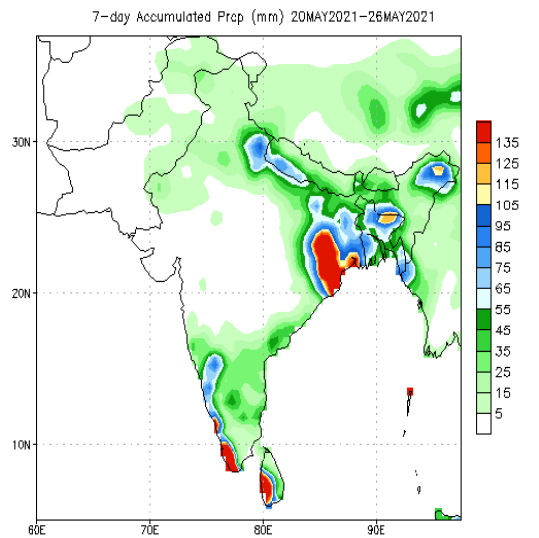


25 May 2021

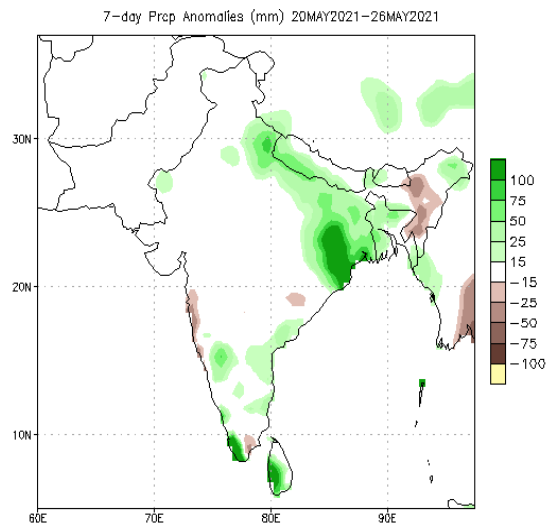
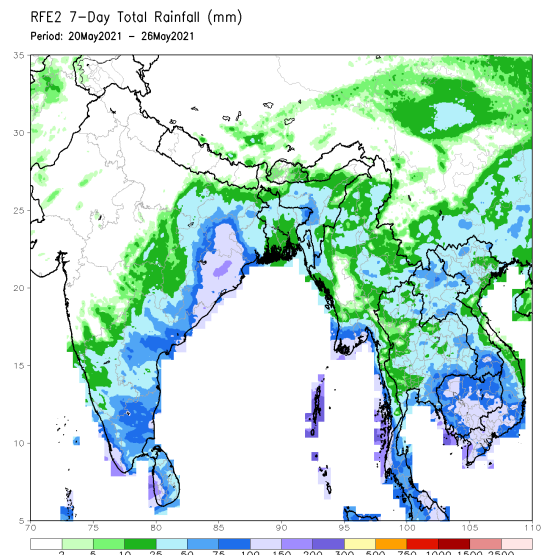


Weekly Rainfall Monitoring

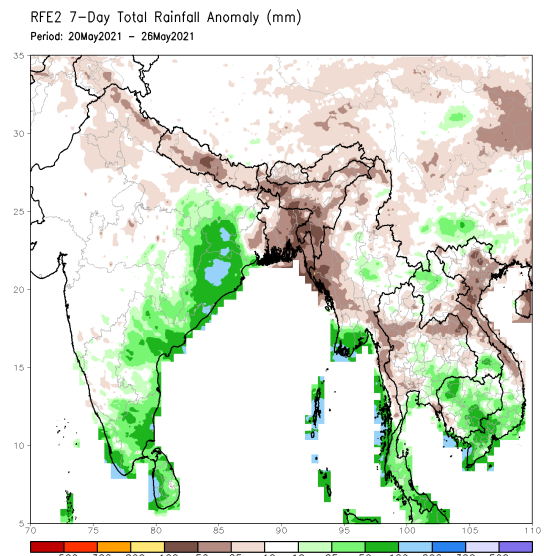
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite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



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

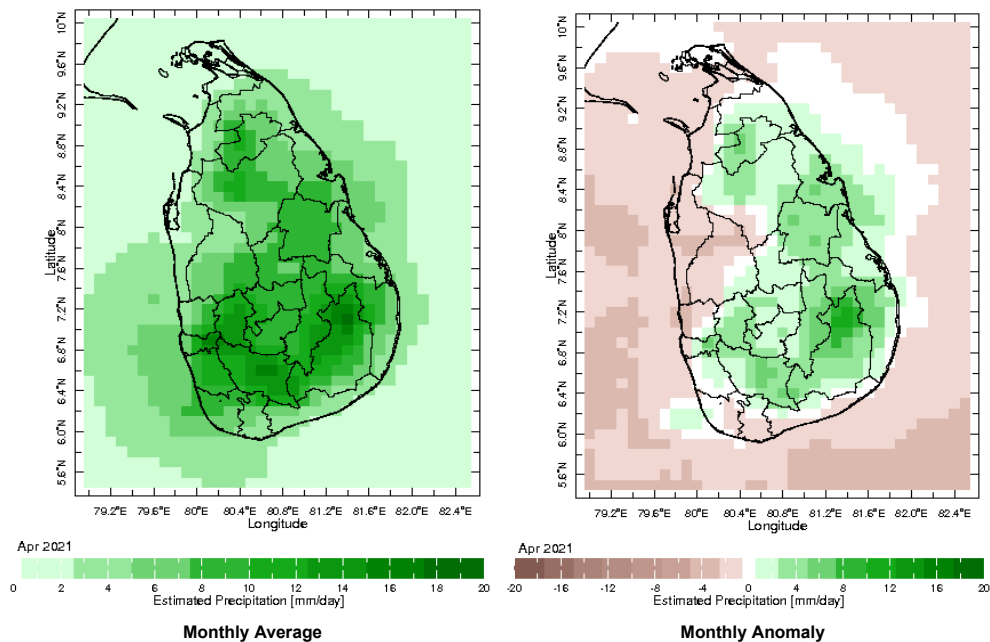


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1981-2010)

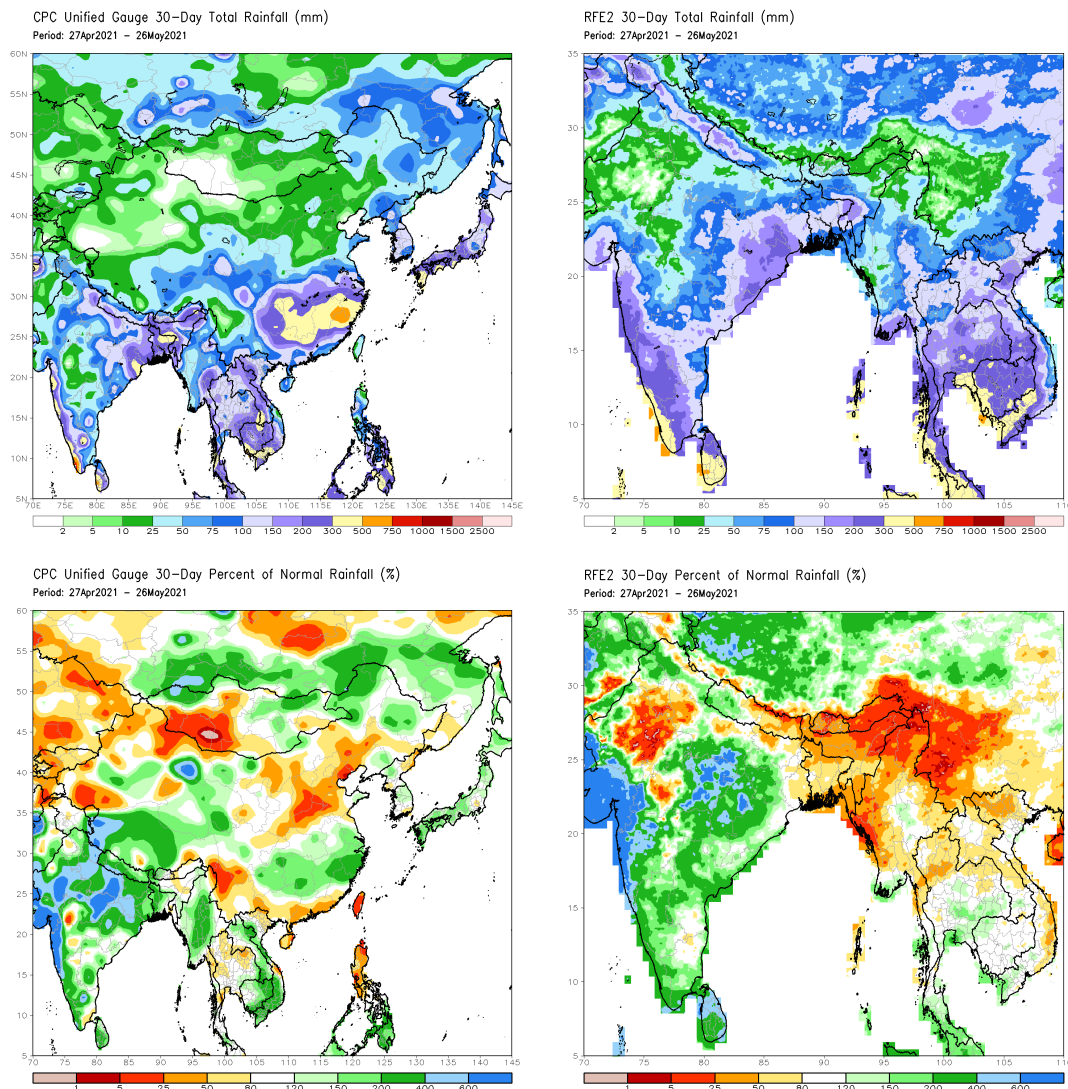


Monthly Rainfall Monitoring

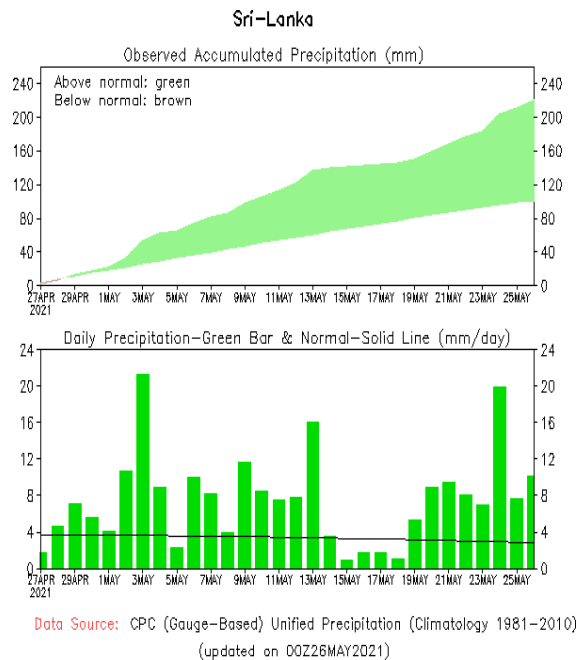
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



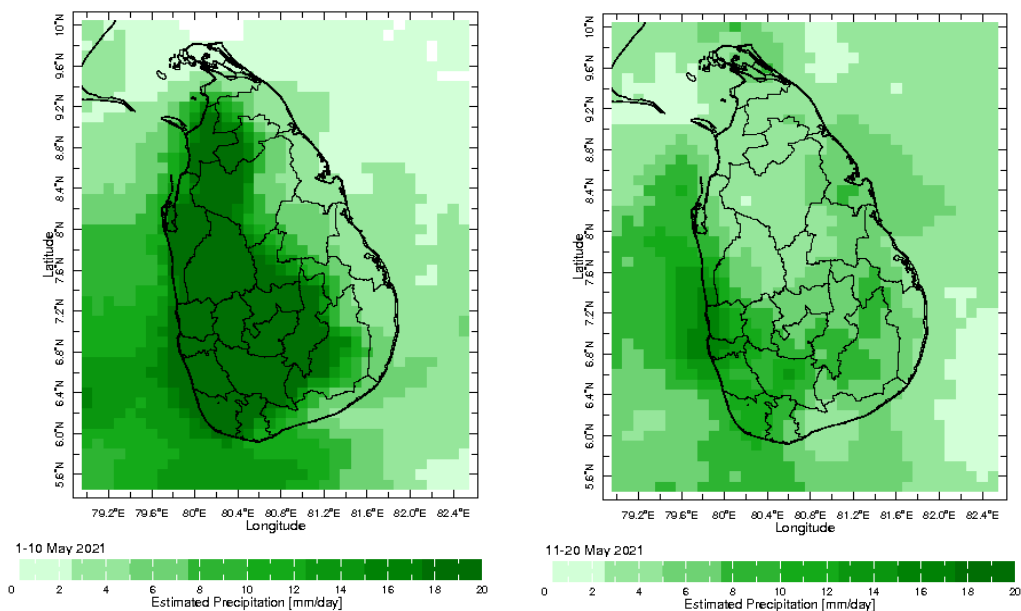
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



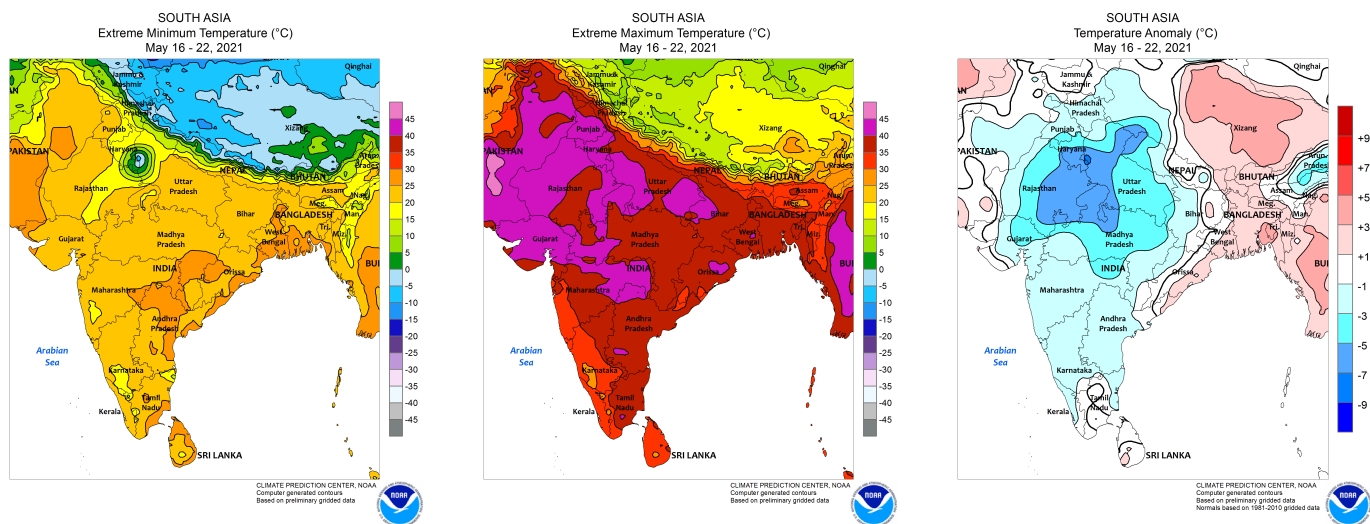
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

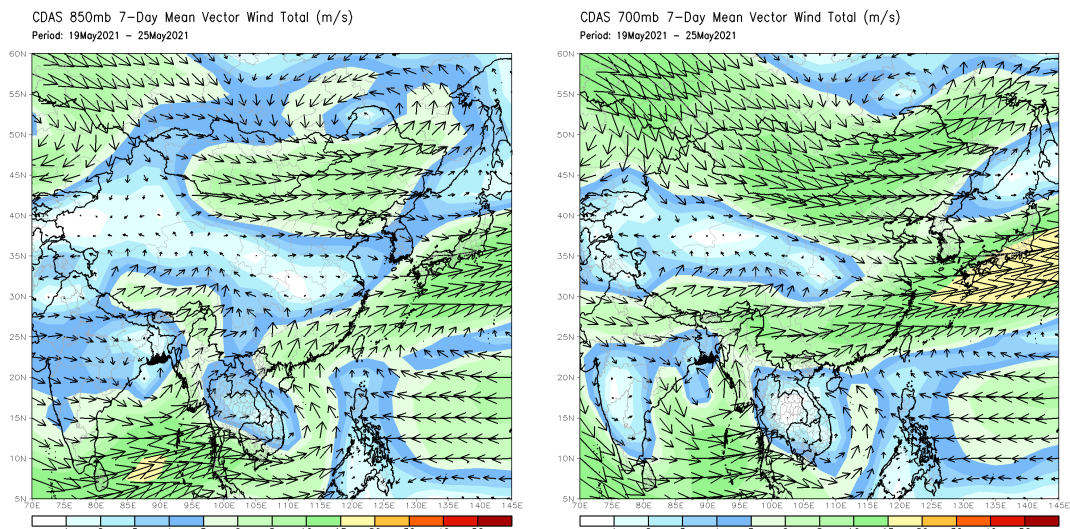


Weekly Temperature Monitoring



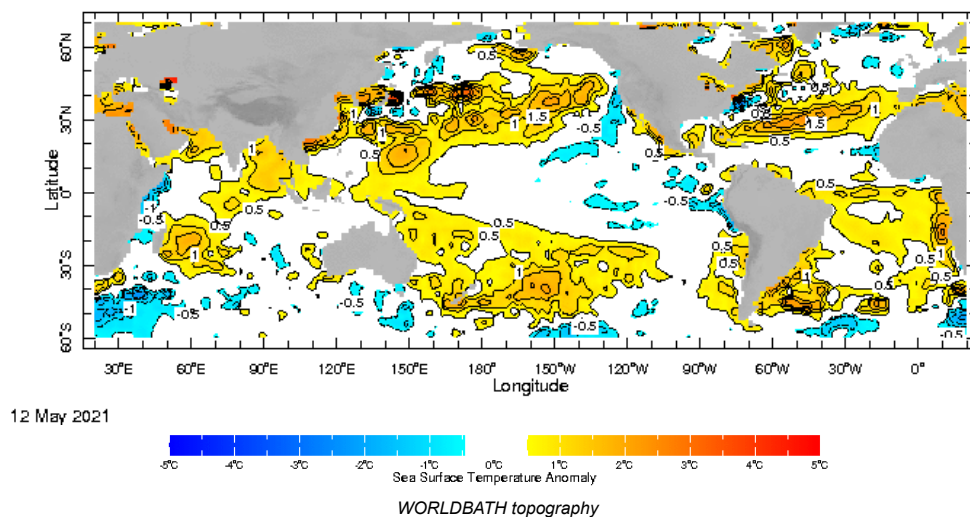
Weekly Wind Monitoring

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.

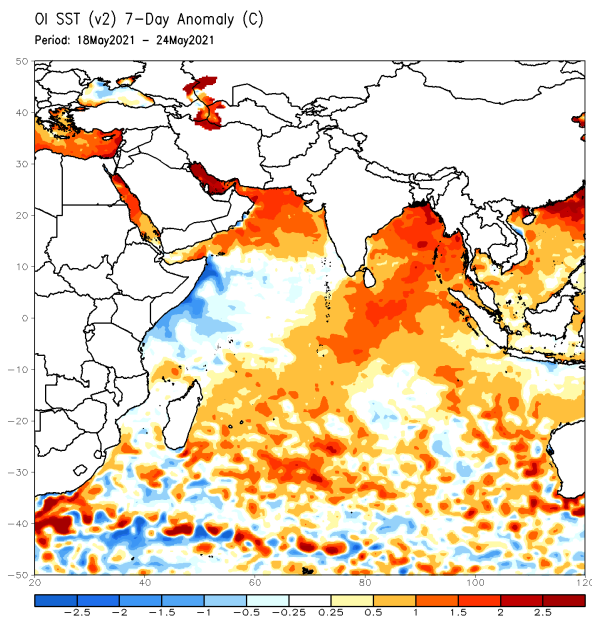


Weekly Average SST Anomalies

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

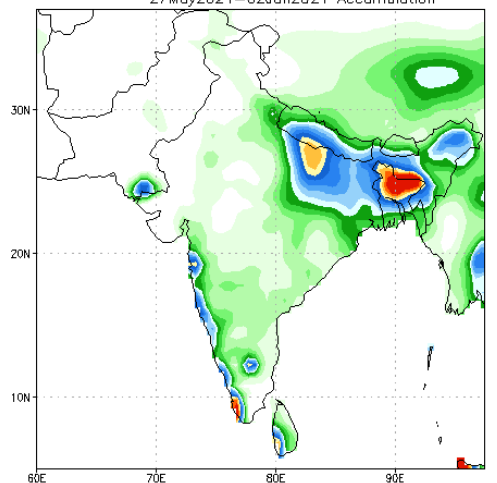


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



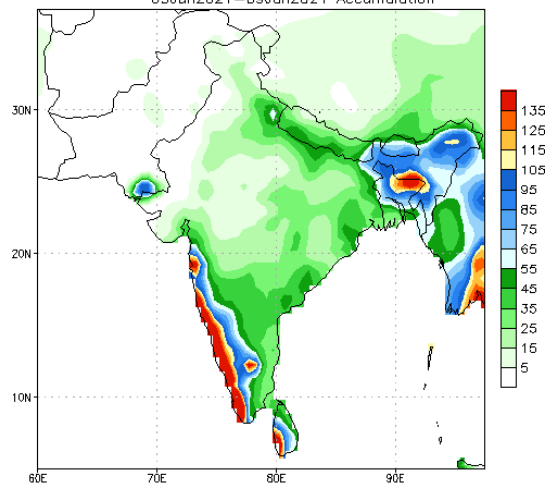
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 27May2021
27May2021-02Jun2021 Accumulation



Bias correction based on last 30-day forecast error

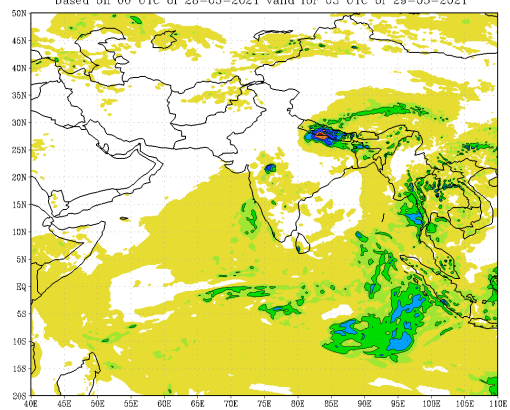
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 27May2021
03Jun2021-09Jun2021 Accumulation



Bias correction based on last 30-day forecast error

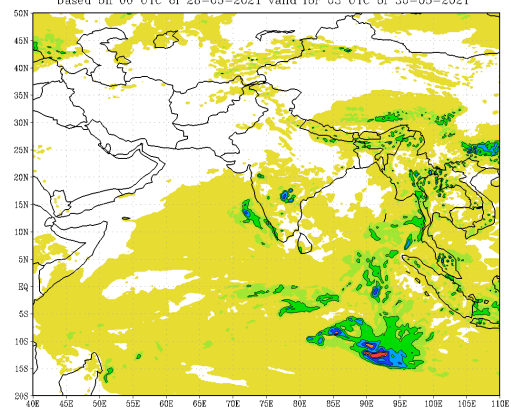
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 28-05-2021 valid for 03 UTC of 29-05-2021



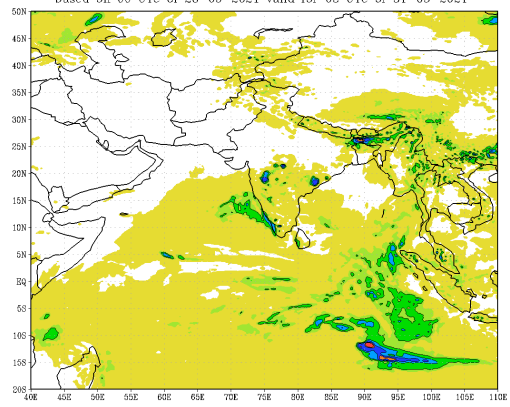
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 28-05-2021 valid for 03 UTC of 30-05-2021



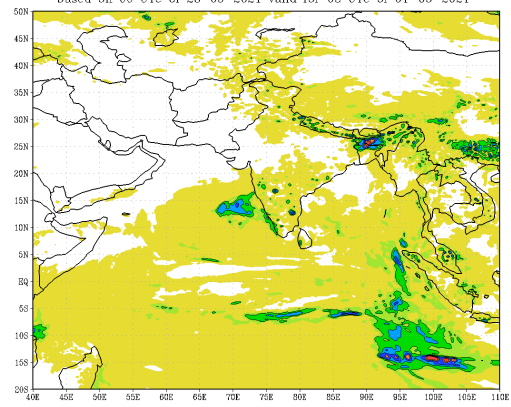
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 28-05-2021 valid for 03 UTC of 31-05-2021

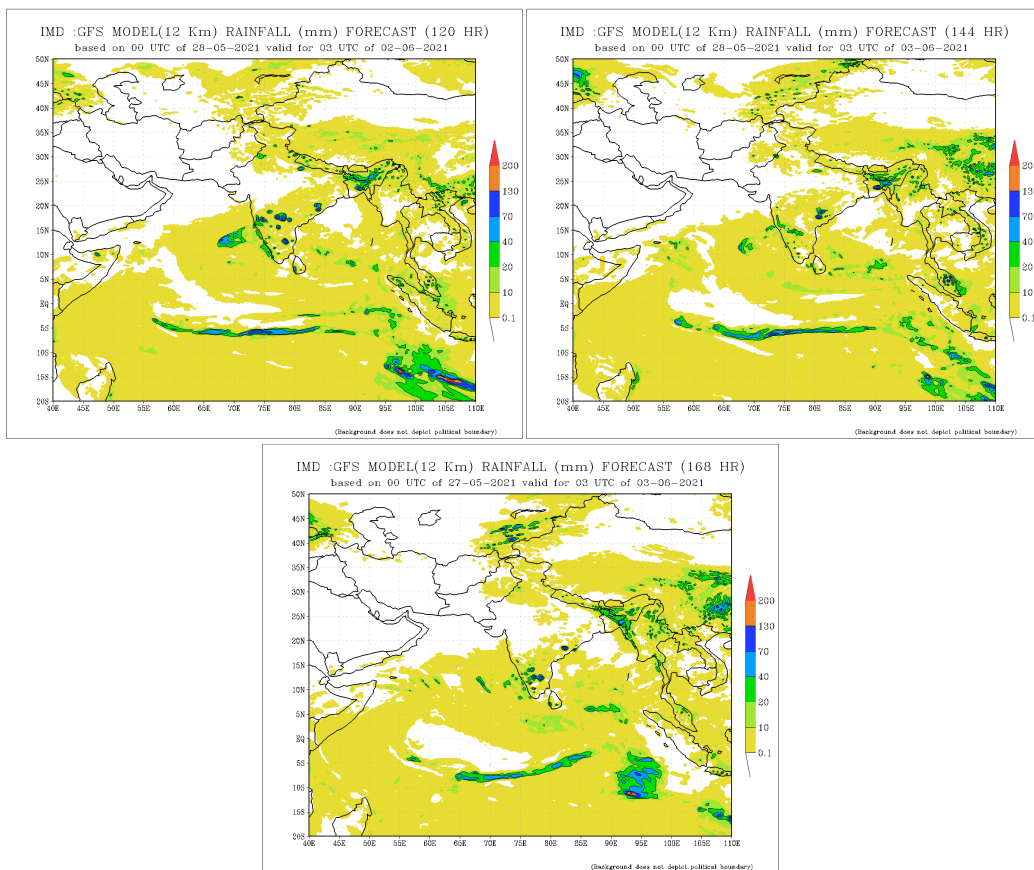


(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 28-05-2021 valid for 03 UTC of 01-06-2021

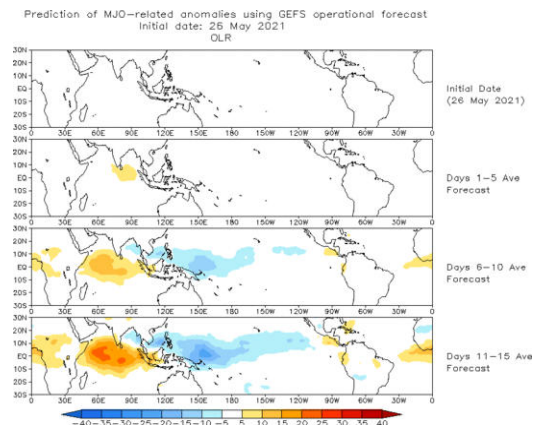


(Background does not depict political boundary)



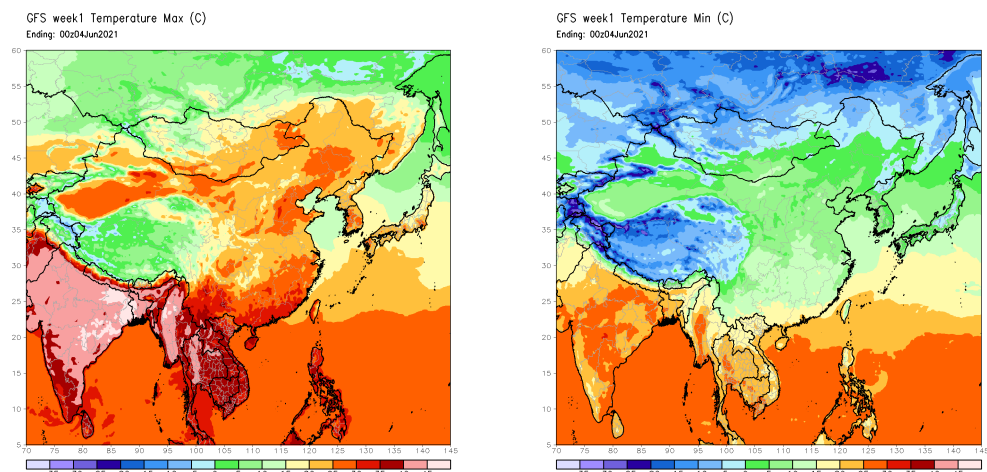
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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.



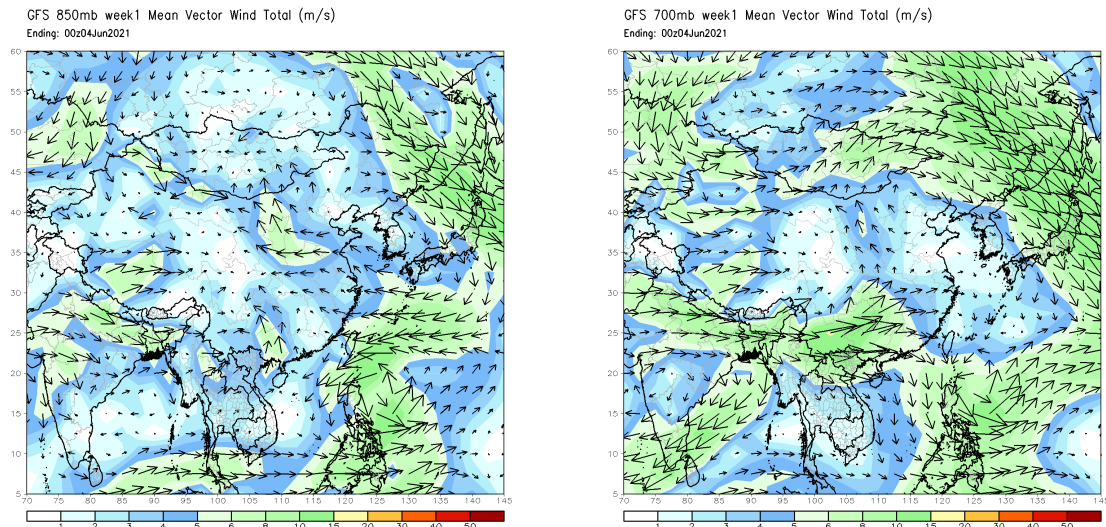
Weekly Temperature Forecast

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



Weekly Wind Forecast

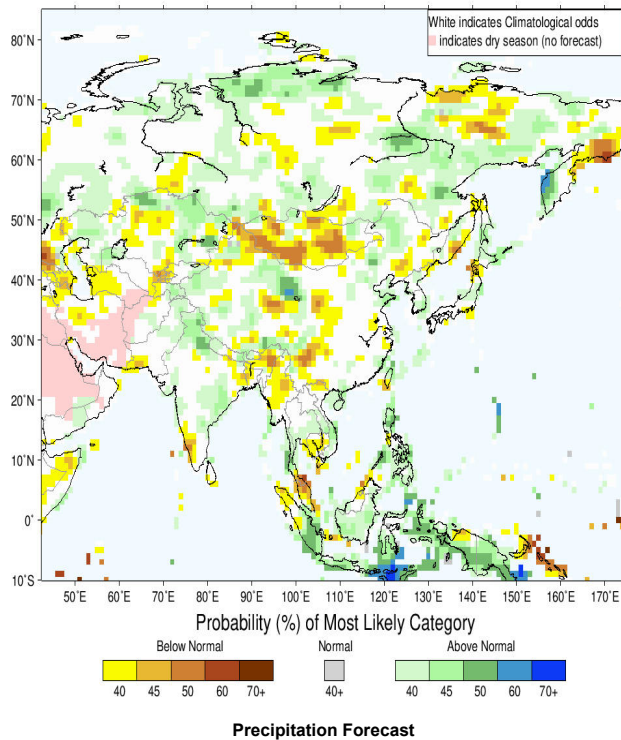
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



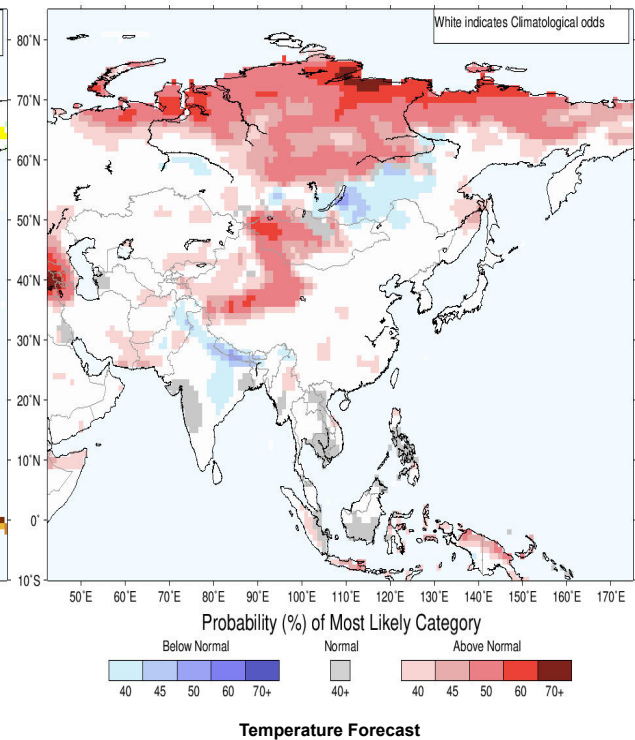
Seasonal Rainfall and Temperature Forecast

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 June-July-August 2021, Issued May 2021



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



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