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

Week of 2 - 9 July 2021

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

By: Nipuni Alahakoon, Ushan Adithya, Azra Munas, Tuan Hadgie, Lareef Zubair and Michael Bell[1] (FECT and IRI[1])

HIGHLIGHTS

Rainfall Prediction

- *Very heavy rainfall is predicted in Western & Sabaragamuwa provinces during 1st - 7th July. Also, from the 8th- 14th July for the same regions.*

Monitored Rainfalls

- *Showers were experienced in Eastern, Sabaragamuwa & Southern provinces with a max of 60 mm in Ampara on 24th June.*

Monitored Wind

- *From 23rd- 29th June: up to 10-15 km/h from the West and South were experienced over the island.*

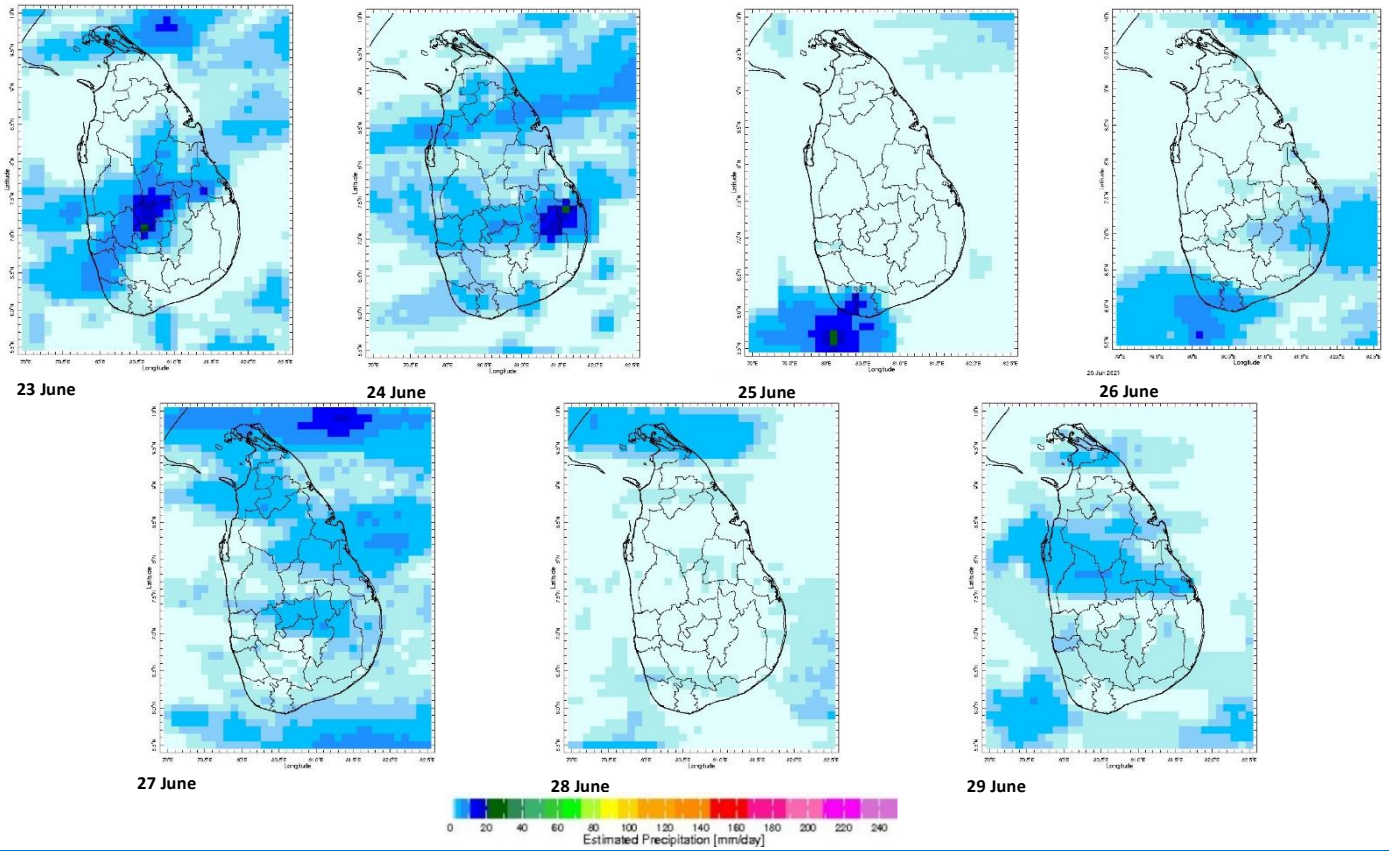
Monitored Sea Surface

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

Monitoring

Rainfall

Daily Estimates for Rainfall from 23rd – 29th June



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
25 – 50 mm	Jaffna, Kilinochchi, Anuradhapura, Trincomalee
10 – 25 mm	Mullaitivu, Mannar, Vavuniya, Puttalam, Kurunegala, Polonnaruwa, Batticaloa, Ampara, Matale, Kandy, Nuwara Eliya, Kegalle, Gampaha, Colombo, Badulla, Moneragala
5 – 10 mm	Kalutara, Ratnapura, Galle
2 – 5 mm	Matara, Hambantota

Weekly Rainfall Anomalies by Districts:

Rainfall Excess

Rainfall	Districts
25 – 50 mm	Jaffna, Kilinochchi
10 – 25 mm	Mullaitivu, Mannar, Vavuniya, Puttalam, Kurunegala, Polonnaruwa, Batticaloa, Ampara, Matale, Kandy, Nuwara Eliya, Badulla, Moneragala, Anuradhapura, Trincomalee

Rainfall Deficit

Rainfall	Districts
25 – 50 mm	Ratnapura
10 – 25 mm	Kalutara, Galle, Matara

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

Monthly Monitoring

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

1st– 10th June:

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

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

11th– 20th June:

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

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 close to neutral to the North and warmer to the South.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 1st – 7th July:

Total rainfall by Provinces:

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

From 8th – 14th July:

Total rainfall by Provinces:

Rainfall	Provinces
115 mm	Western, Sabaragamuwa
95 mm	Southern
85mm	North western, Central
55 mm	Uva
35 mm	North central
25 mm	Eastern
15 mm	Northern

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

MJO based OLR predictions

For the next 15 days:

MJO shall significantly enhance the rainfall during 30th Jun - 9th Jul; and slightly enhance during 10th – 14th Jul.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been showers over the following provinces: Eastern, Sabaragamuwa and Southern

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 Western, Sabaragamuwa & southern provinces the last – driven by the warm SST's.

Predictions

Rainfall: During the next week (1st – 7th July) very heavy rainfall are predicted for Western, Sabaragamuwa & Southern provinces. And fairly heavy showers will occur North-western and Central provinces; and in Galle and Matara districts.

Temperatures: The temperature remains slightly normal for July. During 3rd – 11th 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.

FOUNDATION FOR ENVIRONMENT, CLIMATE AND TECHNOLOGY

www.climate.lk www.tropicalclimate.org

Weekly Climate Bulletin for Sri Lanka

Inside This Issue

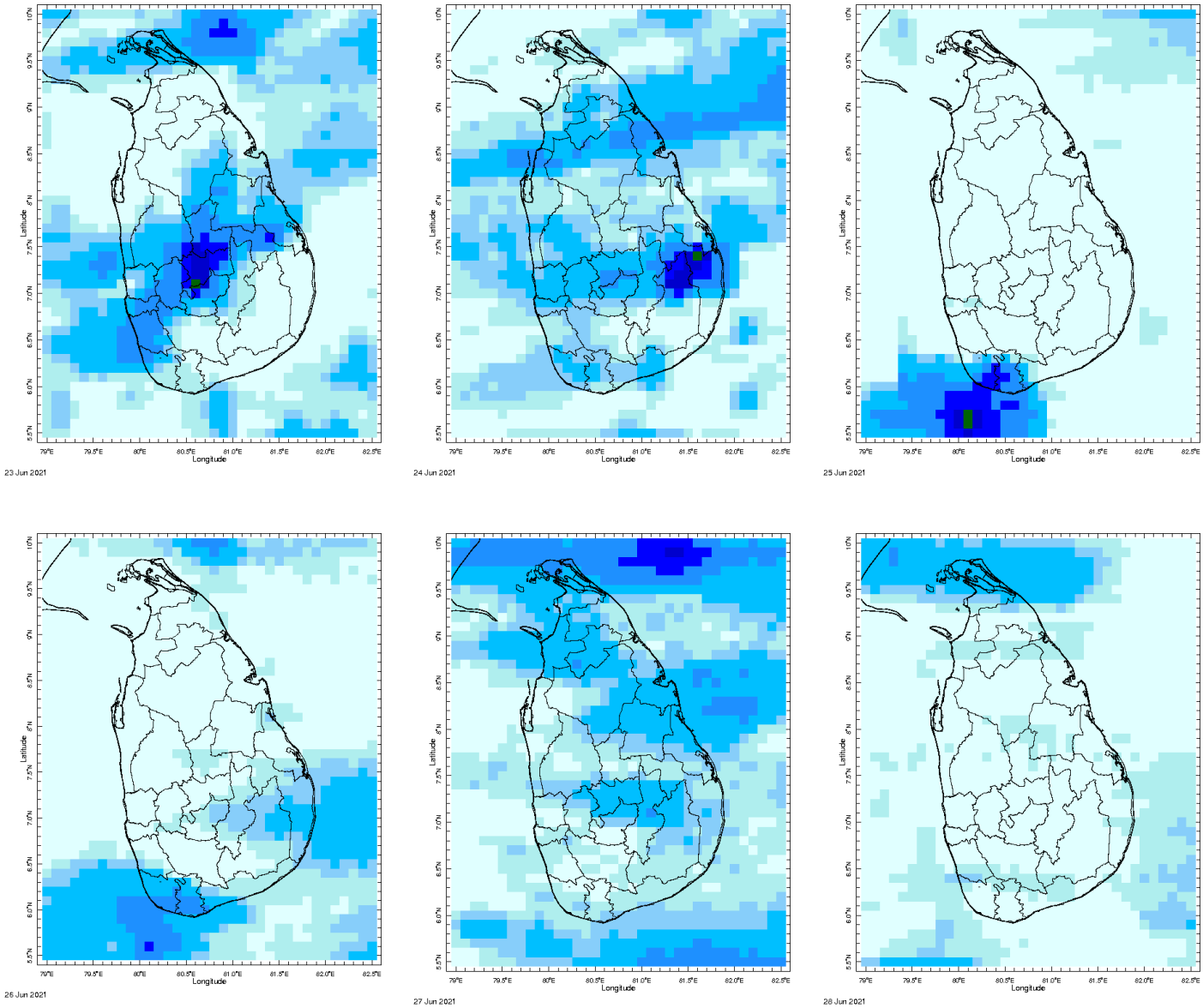
1. **Monitoring**
   a. Daily Rainfall Monitoring
   b. Weekly Rainfall Monitoring
   c. Monthly Rainfall Monitoring
   d. Dekadal (10 Day) Satellite Derived Rainfall Estimates
   e. Weekly Temperature Monitoring
   f. Weekly Wind Monitoring
   g. Weekly Average SST Anomalies
2. **Predictions**
   a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
   b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
   c. MJO Related OLR Forecast
   d. Weekly Temperature Forecast
   e. Weekly Wind Forecast
   f. Seasonal Predictions from IRI

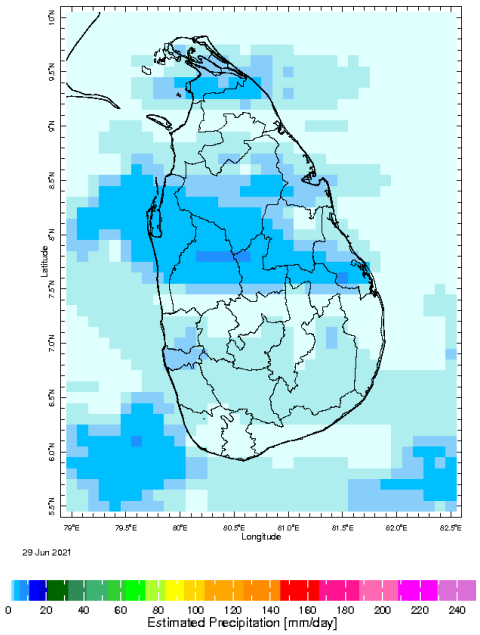
Download

MONITORING

Daily Rainfall Monitoring

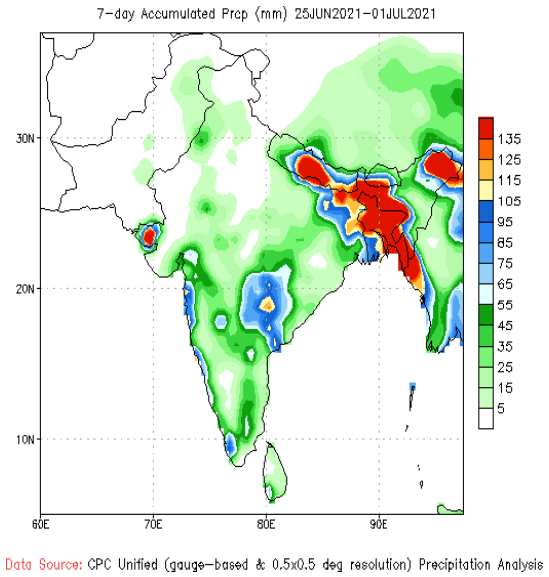
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



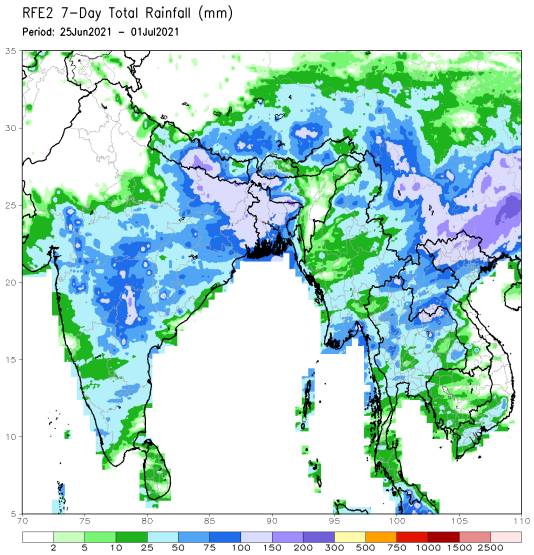


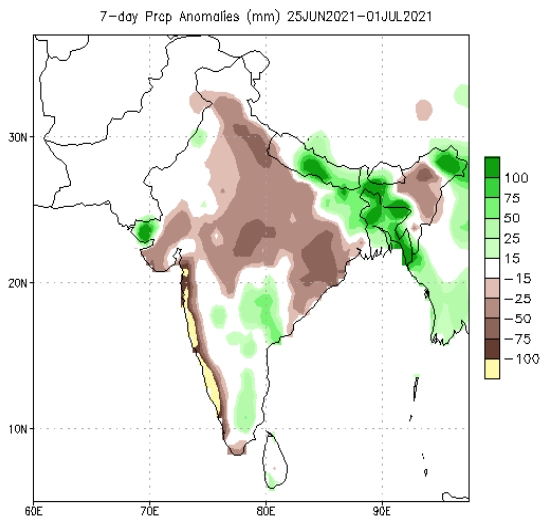
Weekly Rainfall Monitoring

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.

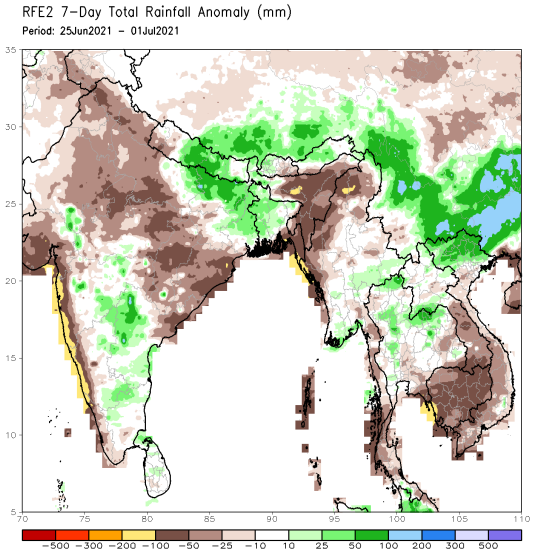


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



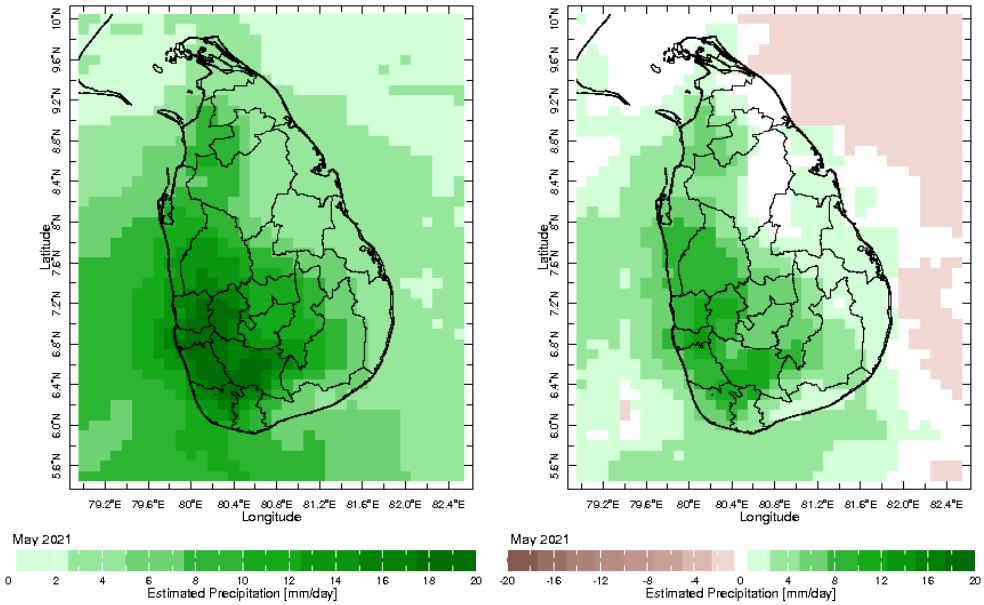


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)



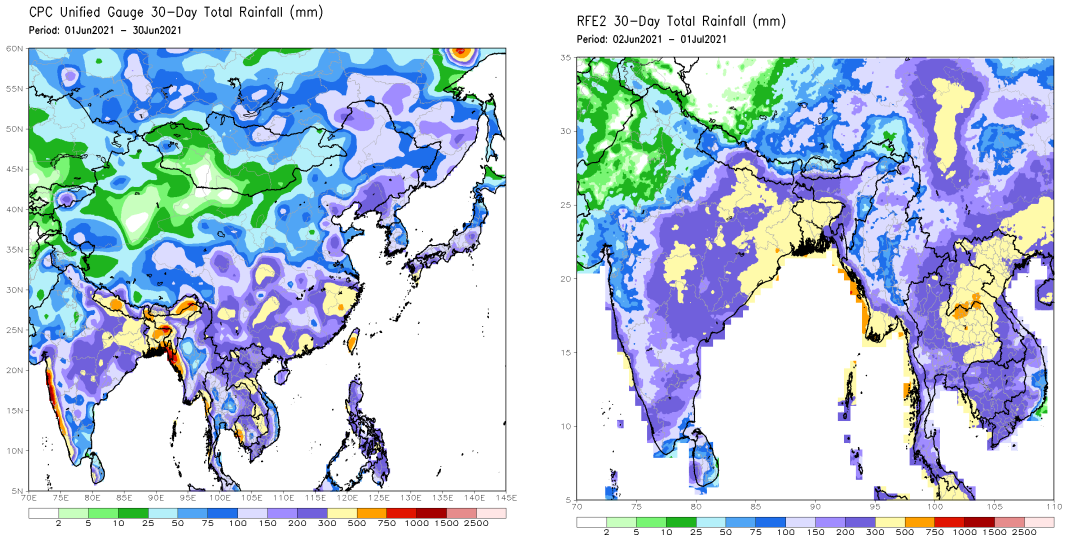
Monthly Rainfall Monitoring

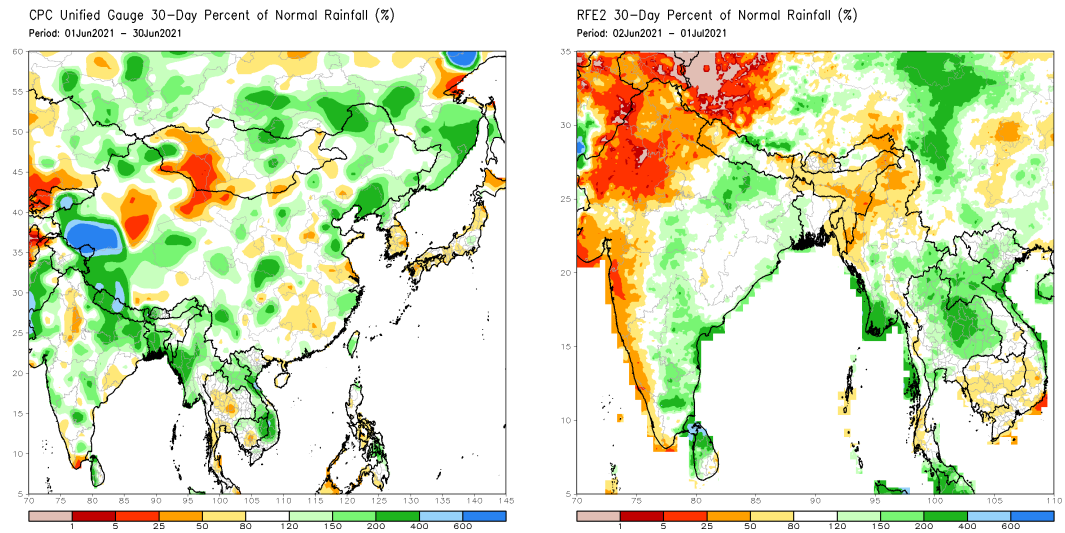
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



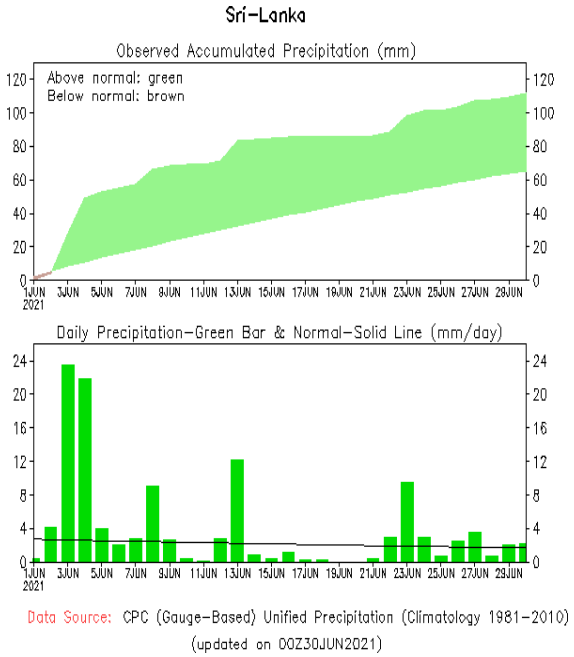
Monthly Average **Monthly Anomaly**

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.

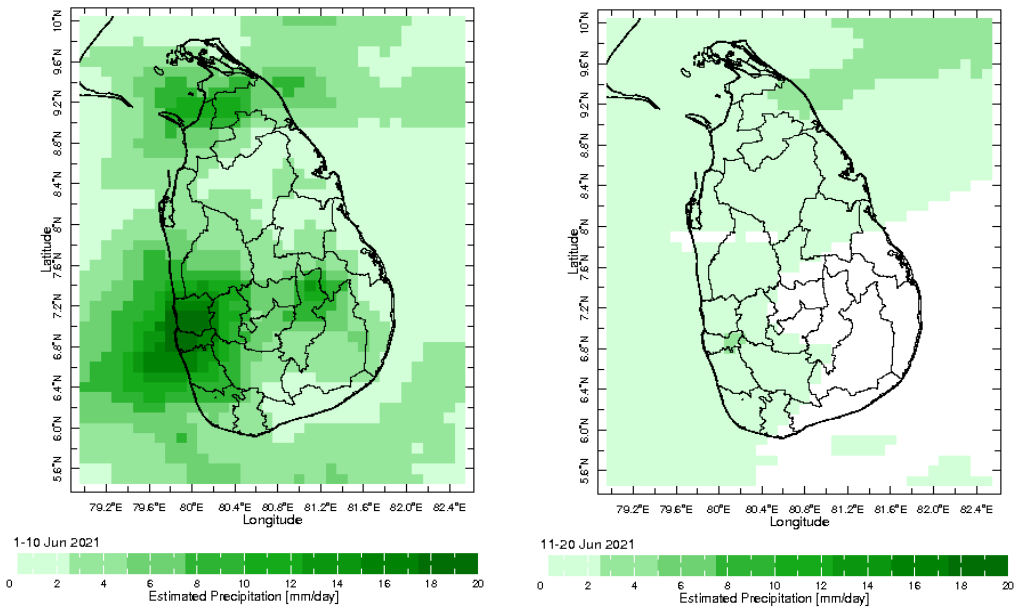




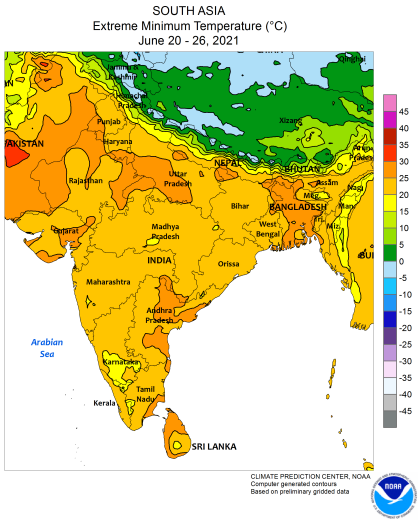
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

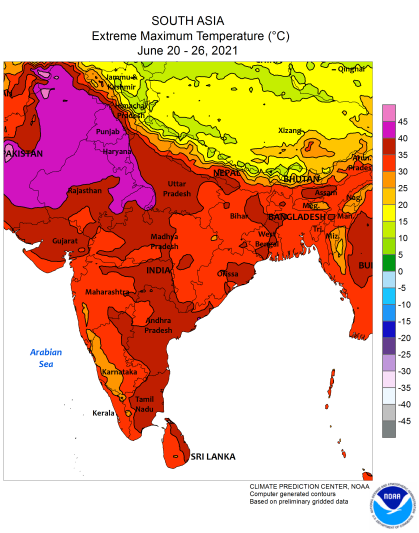


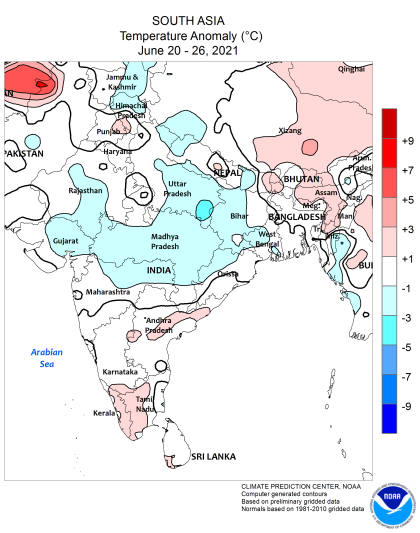
Dekadal (10 Day) Satellite Derived Rainfall Estimates



Weekly Temperature Monitoring

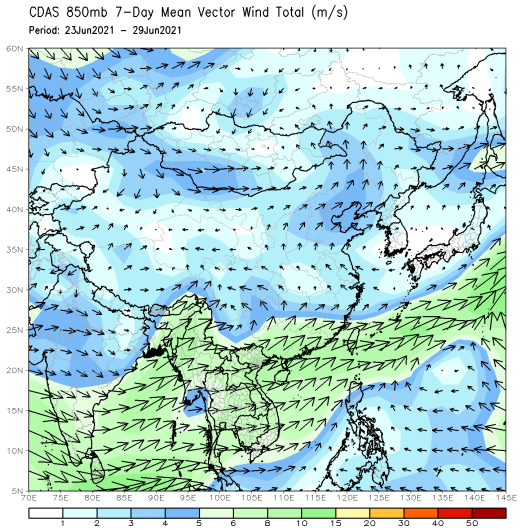


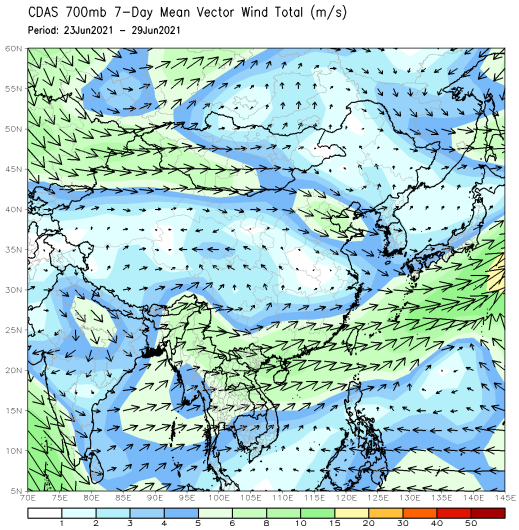




Weekly Wind Monitoring

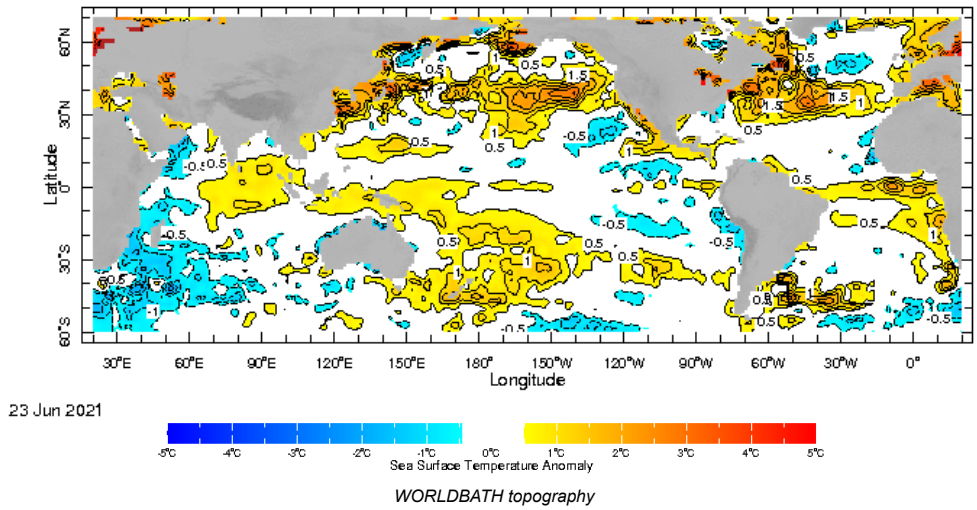
The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.



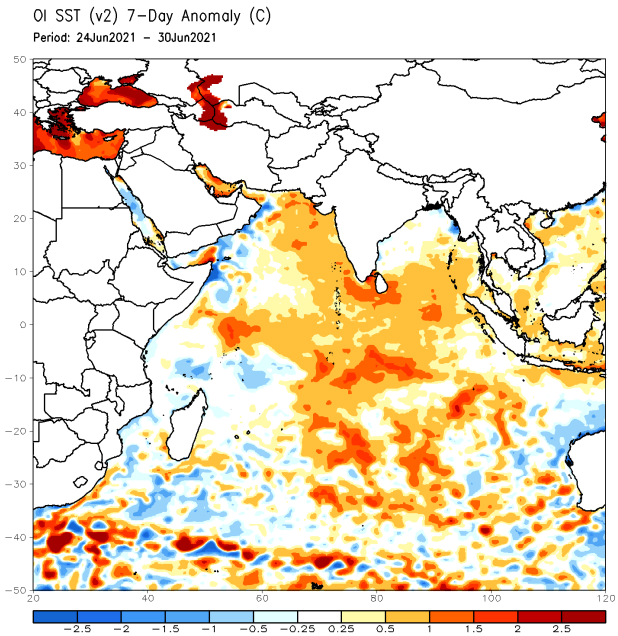


Weekly Average SST Anomalies

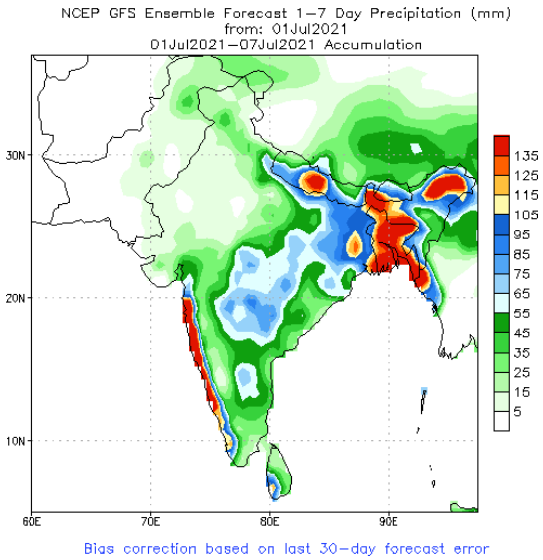
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

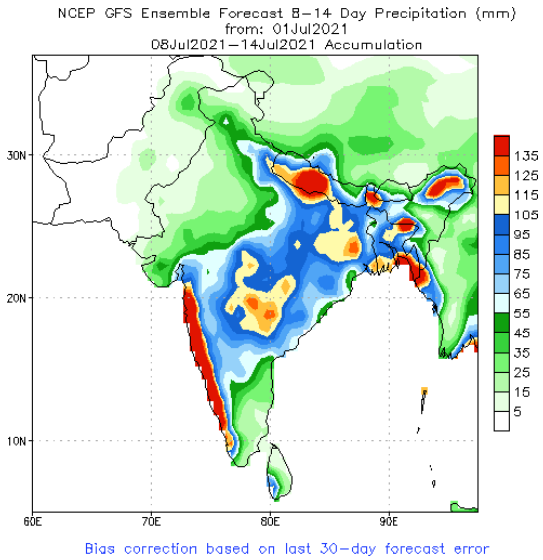


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

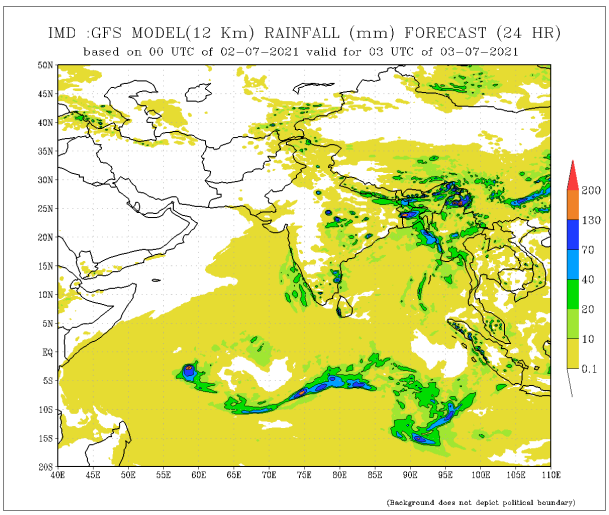


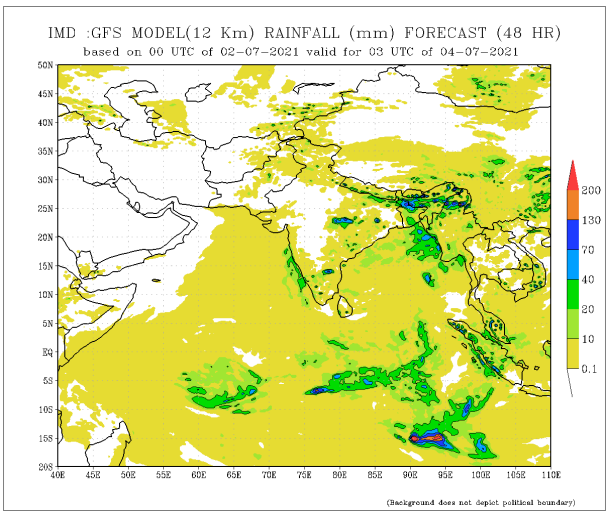
NCEP GFS 1- 14 Day prediction

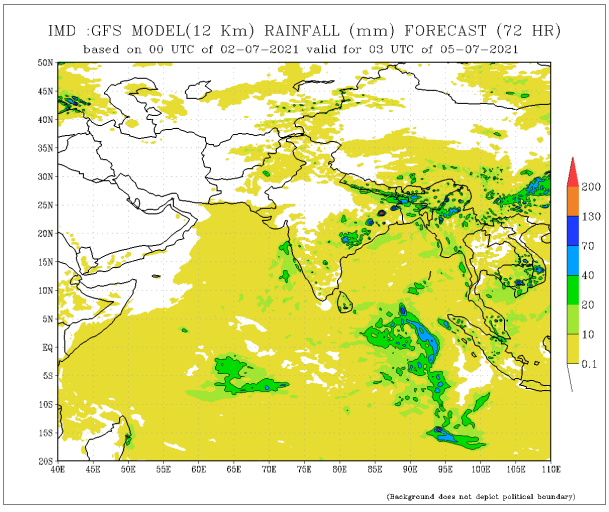


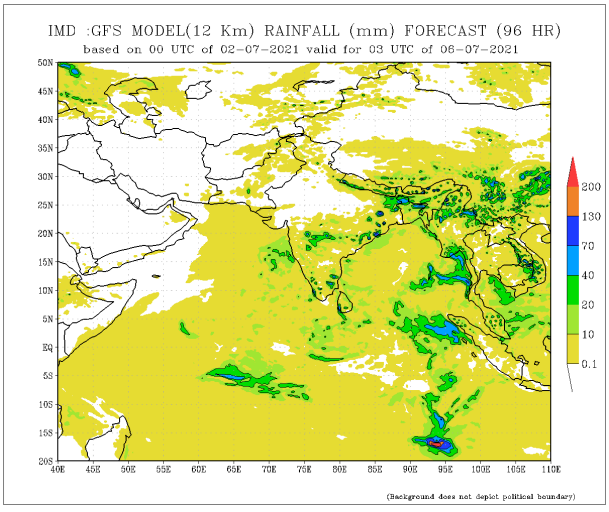


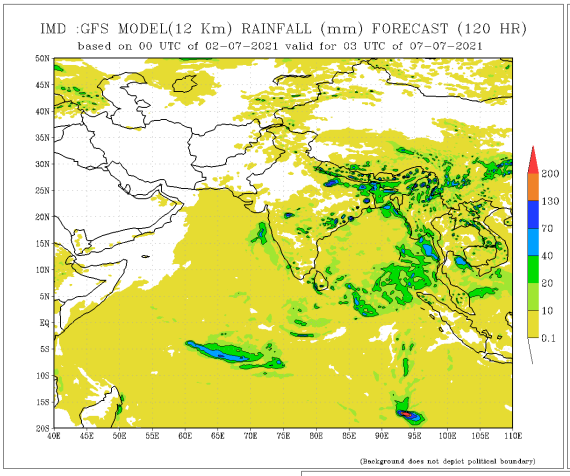
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

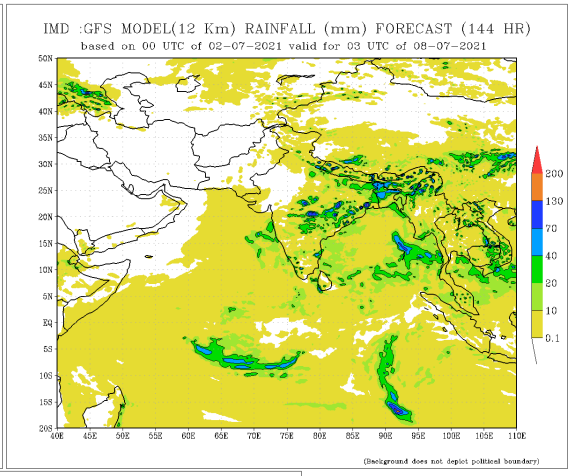


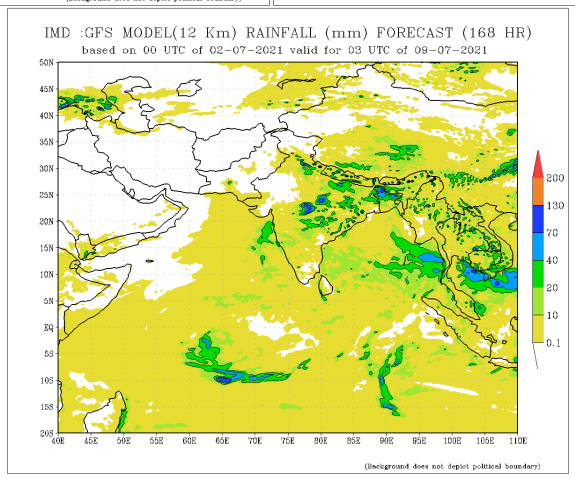






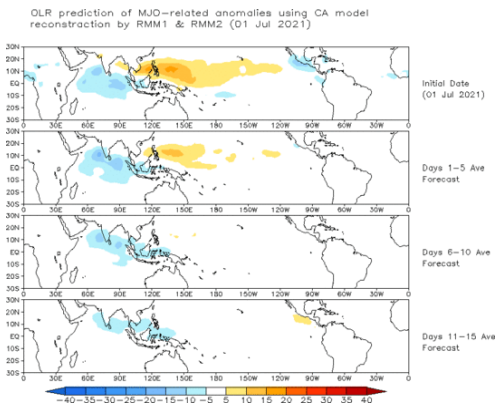






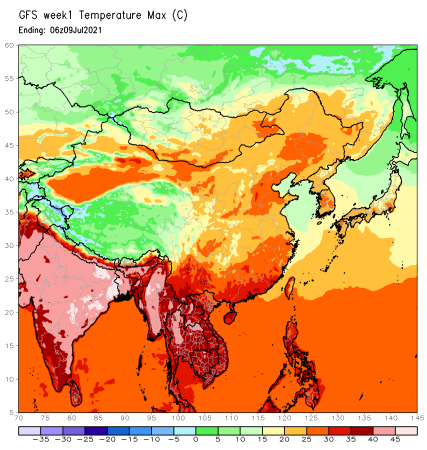
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

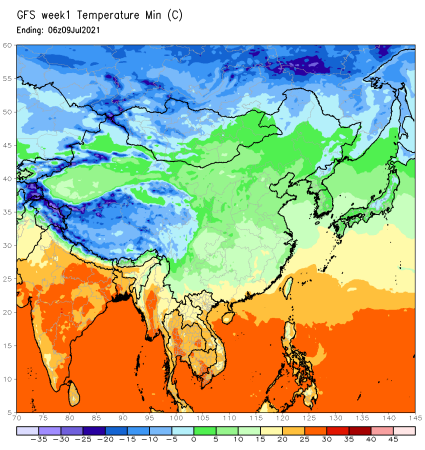
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated anomolous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.



Weekly Temperature Forecast

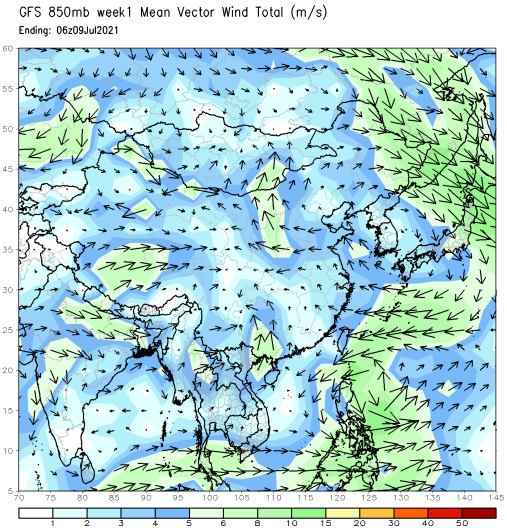
Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

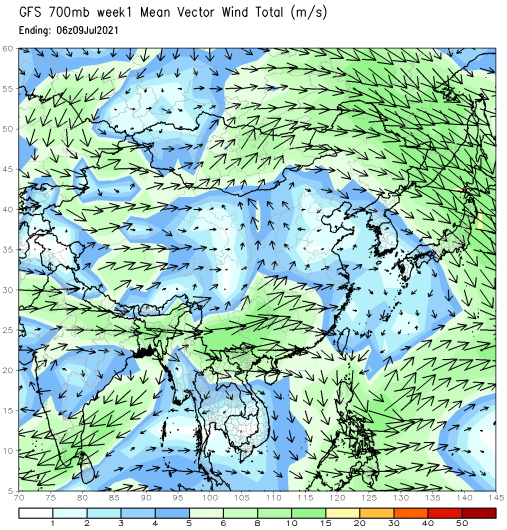




Weekly Wind Forecast

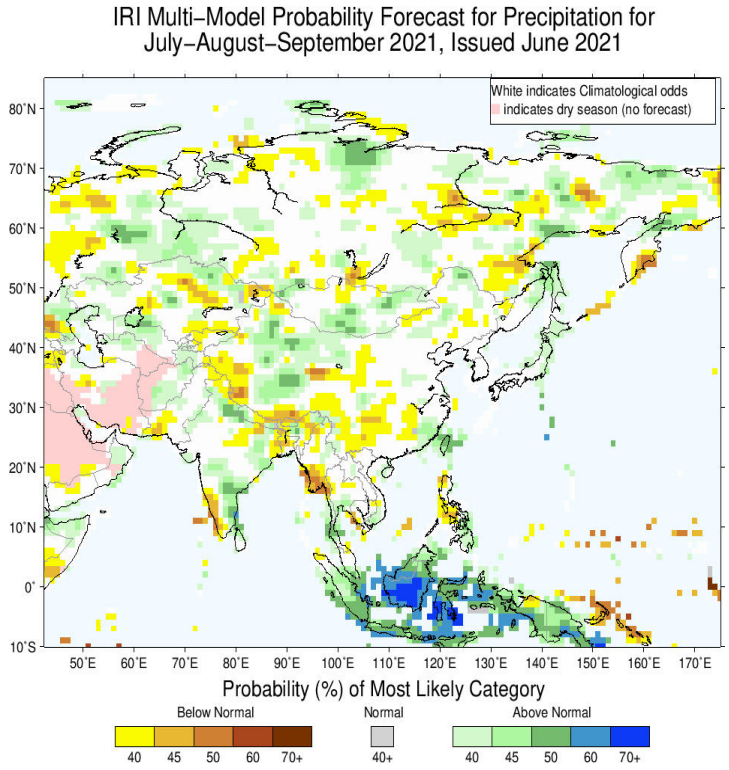
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



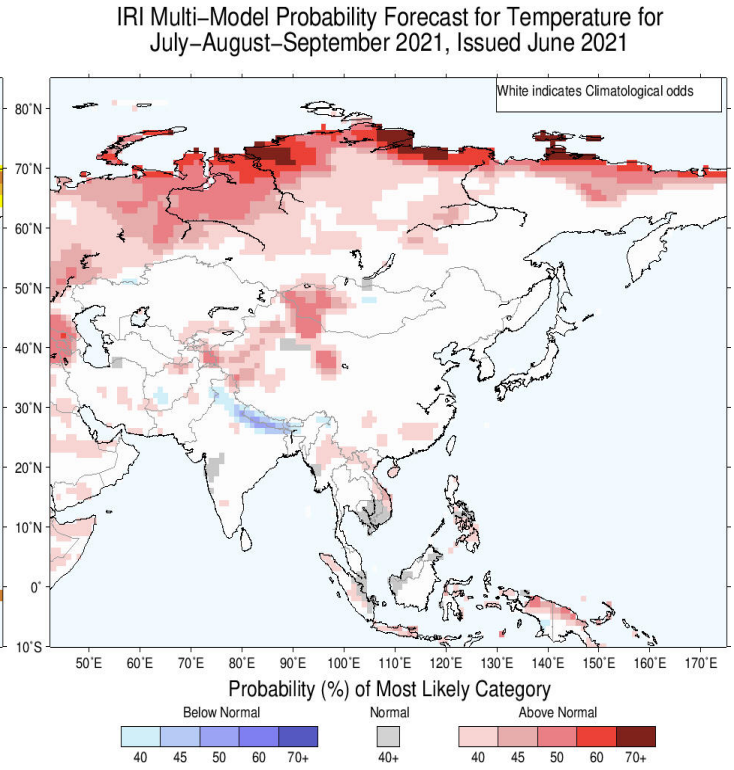


Seasonal Rainfall and Temperature Forecast

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%).



Precipitation Forecast



Temperature Forecast

Subscribe to our Monthly Maldives Newsletter

email address

Subscribe

Follow @climatelk

Contact Us
email: fectsl@gmail.com
phone: (+94) 81 2376746
blog: www.fectsl.blogspot.com

Foundation for Environment, Climate & Technology
C/O Mahaweli Authority of Sri Lanka,
Digana Village,
Rajawella,
SRI LANKA