CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *Fairly heavy rainfall is predicted for Central, Northern, Sabaragamuwa and Western provinces and Galle and Matara districts during 3rd - 7th September.*

Monitored Rainfalls

- *Fairly heavy rains were experienced in the Southern, Central, Sabaragamuwa & Western provinces with max of 86 mm in Matara district on 1st September.*

Monitored Wind

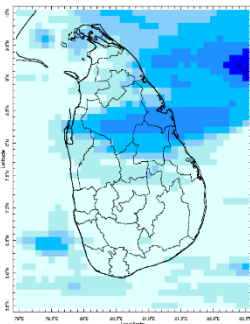- *From 24th- 30th August: up to 15 m/s from Southwesterly were experienced over the island.*
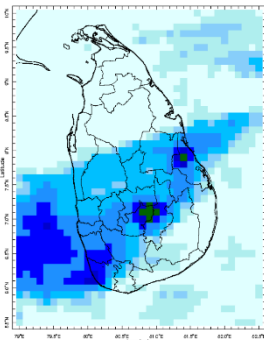
Monitored Sea Surface

- *Sea surface temperature was observed above 0.5 ℃ to the West of Sri Lanka and neutral to the East.*
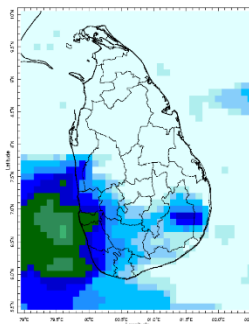
Monitoring
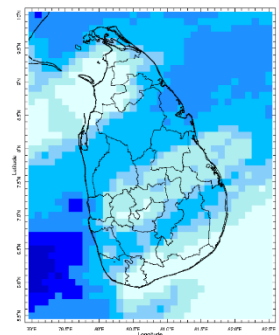### Rainfall

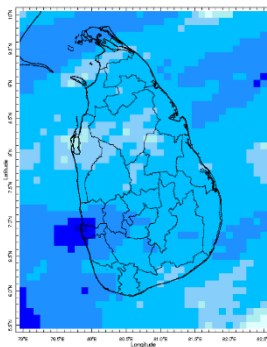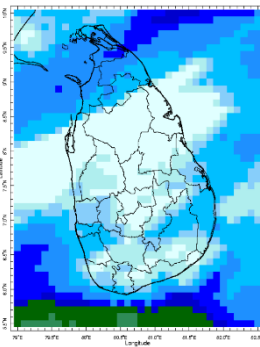*Daily Estimates for Rainfall from 24th – 30th August*
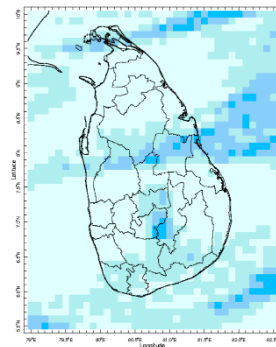

24 August

25 August

26 August

27 August

28 August

29 August

30 August

Estimated Precipitation [mm/day]
0 20 40 60 80 100 120 140 160 180 200 220 240
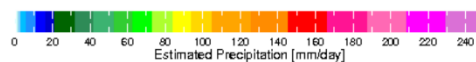
Federation for Environment, Climate and Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: August 25, 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-August 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℃ to the West of Sri Lanka and neutral to the East.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 1st – 7th September:

Total rainfall by Provinces:

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

From 8th – 14th September:

Total rainfall by Provinces:

Rainfall	Provinces
45 mm	Sabaragamuwa
35 mm	Central, Western, Southern
25 mm	Uva, Northern
15 mm	Eastern

MJO based OLR predictions

For the next 15 days:

MJO shall be active thus, slightly enhanced rainfall during 3rd – 15th September.

Interpretation

Monitoring

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

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

Temperatures: The temperature anomalies were slightly less for the Eastern, Northern and North-central provinces during the last week – driven by the warm SST's.

Predictions

Rainfall: During the next week (3rd – 7th September) fairly heavy rainfall is predicted for Central, Northern, Sabaragamuwa and Western provinces and Galle and Matara districts.

Temperatures: The temperature remains slightly normal for August. During 3rd – 11th September, the temperature remains high especially in 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 active thus, slightly enhanced rainfall during 3rd – 15th September.

Understanding the Forecast

	Rainfall (During 24 hours of period)
Light Showers	Less than 12.5 mm
Light to Moderate	Between 12.5 mm and 25 mm
Moderate	Between 25 mm and 50 mm
Fairly Heavy	Between 50 mm and 100 mm
Heavy	Between 100 mm and 150 mm
Very Heavy	More than 150 mm

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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
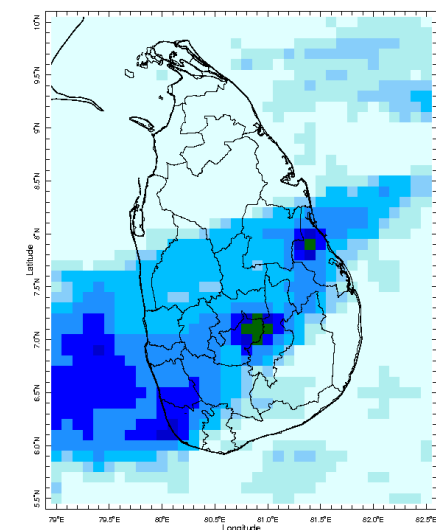
Download

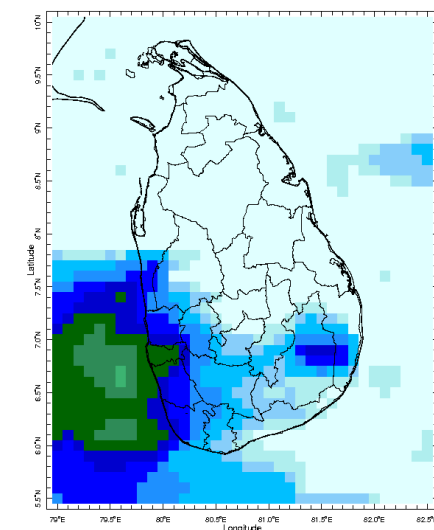## MONITORING

Daily Rainfall Monitoring

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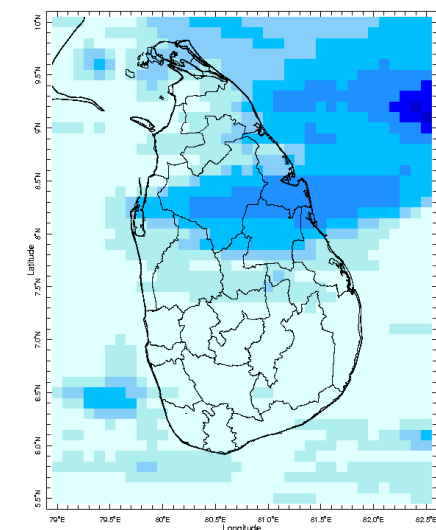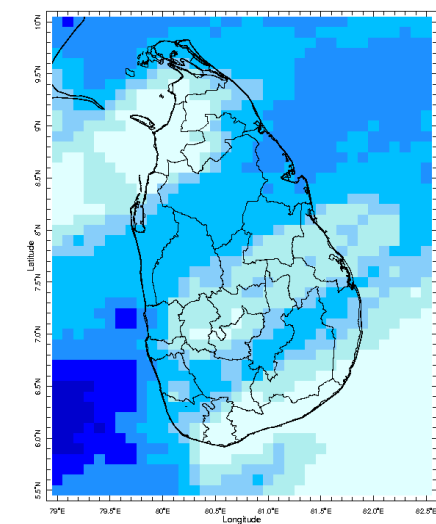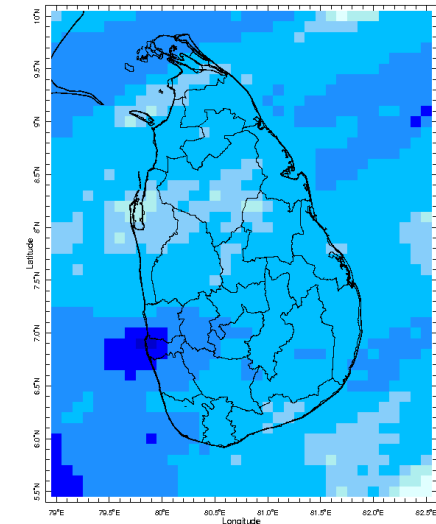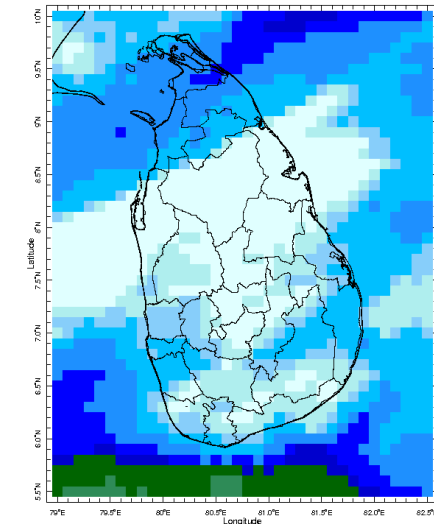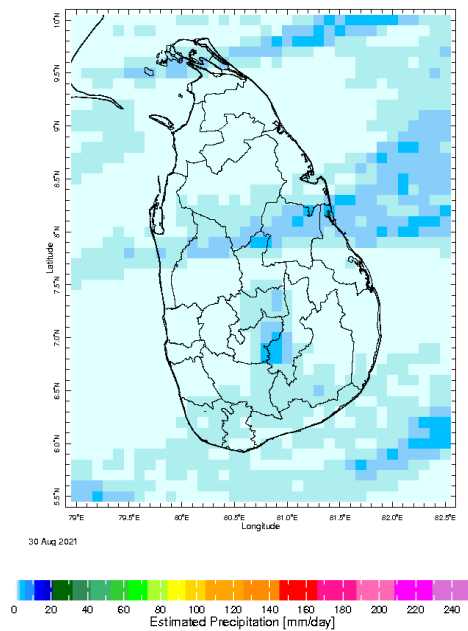

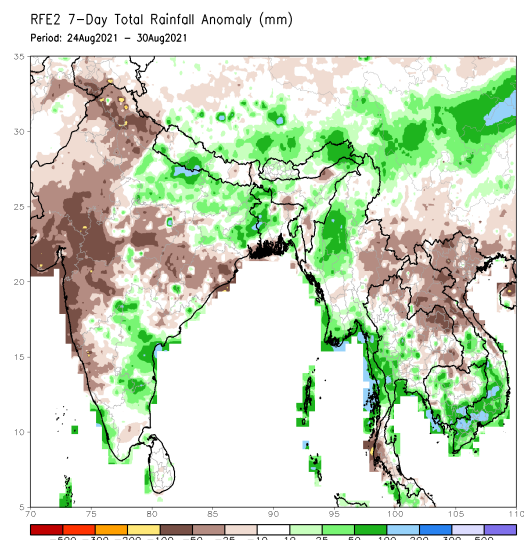24 Aug 2021   25 Aug 2021   26 Aug 2021

27 Aug 2021   28 Aug 2021   29 Aug 2021

30 Aug 2021

Estimated Precipitation [mm/day]

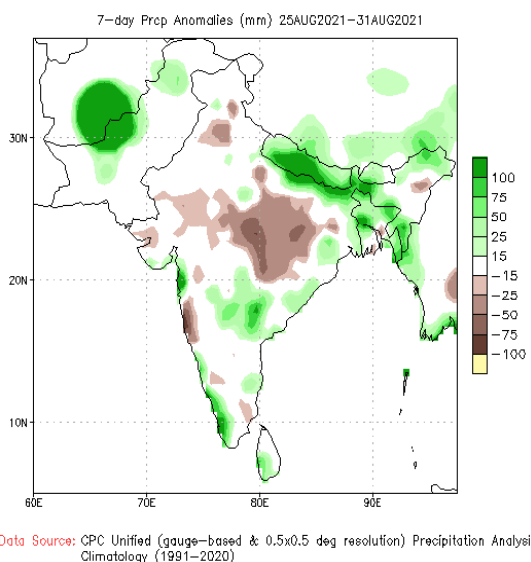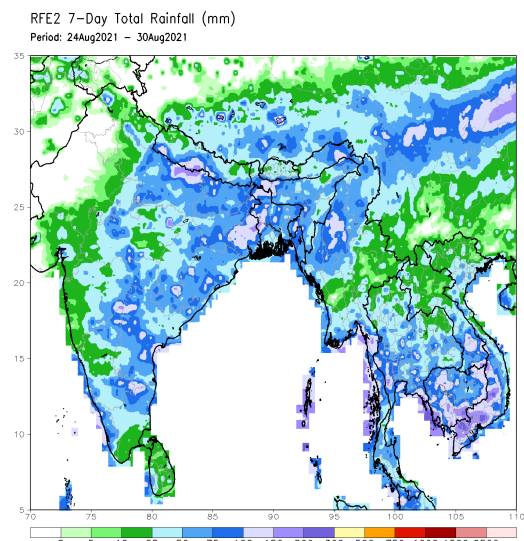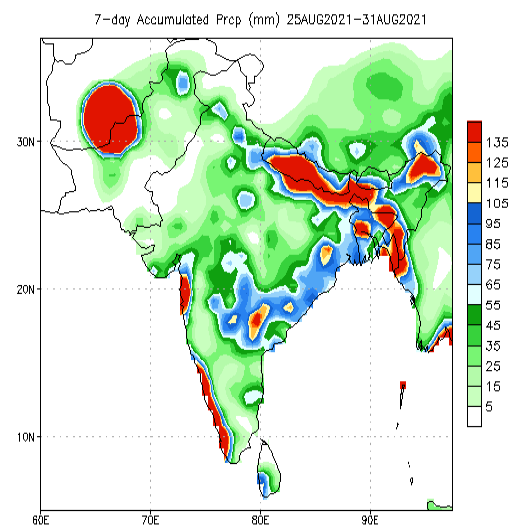## Weekly Rainfall Monitoring

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.

7-day Accumulated Prcp (mm) 25AUG2021-31AUG2021

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

RFE2 7-Day Total Rainfall (mm)
Period: 24Aug2021 – 30Aug2021

7-day Prcp Anomalies (mm) 25AUG2021-31AUG2021

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

RFE2 7-Day Total Rainfall Anomaly (mm)
Period: 24Aug2021 – 30Aug2021
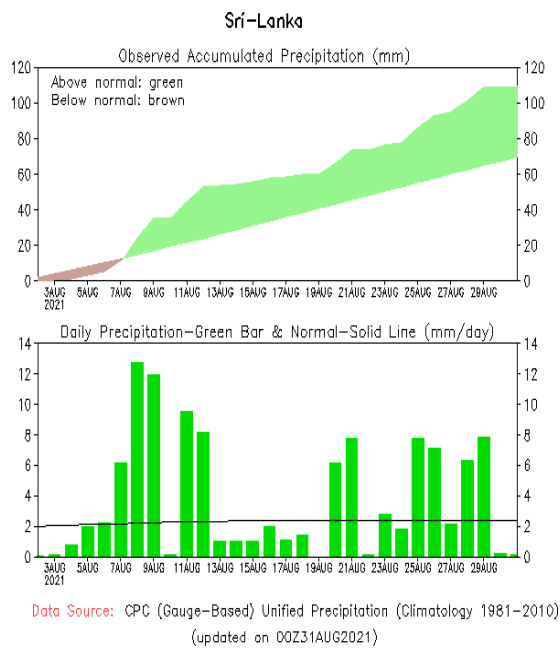
Monthly Rainfall Monitoring

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
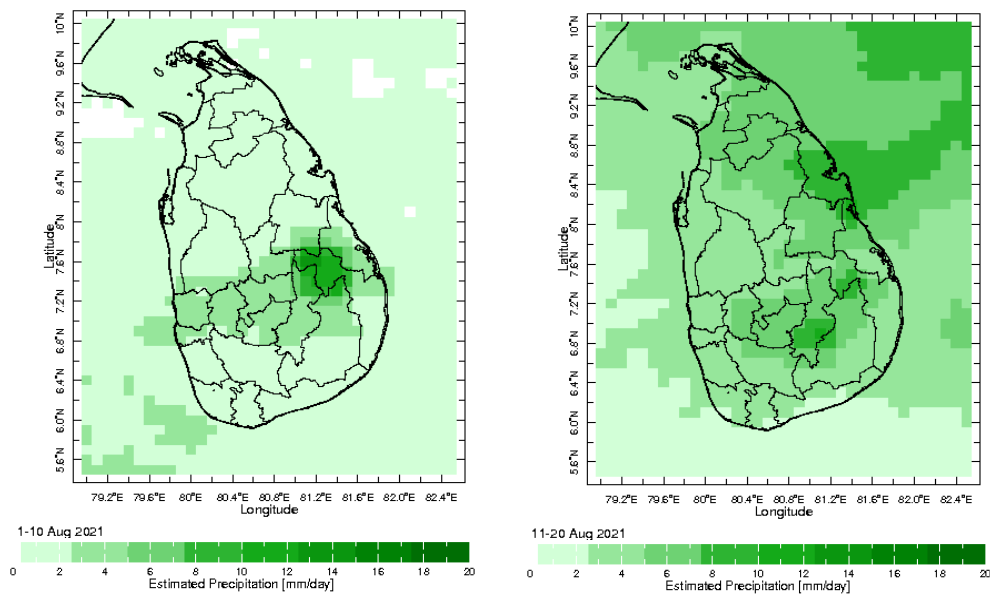

Monthly Average

Monthly Anomaly
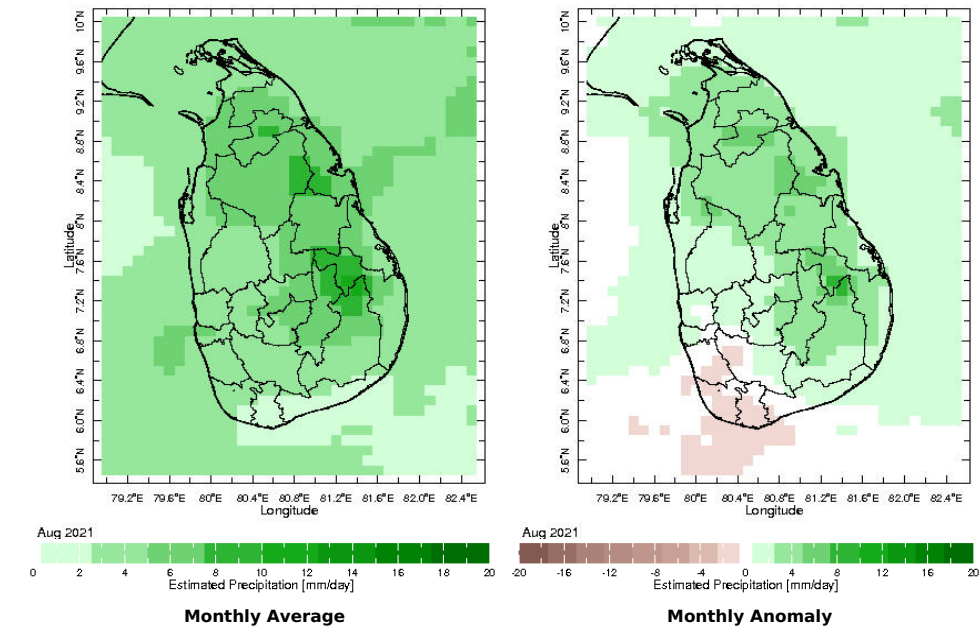
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.
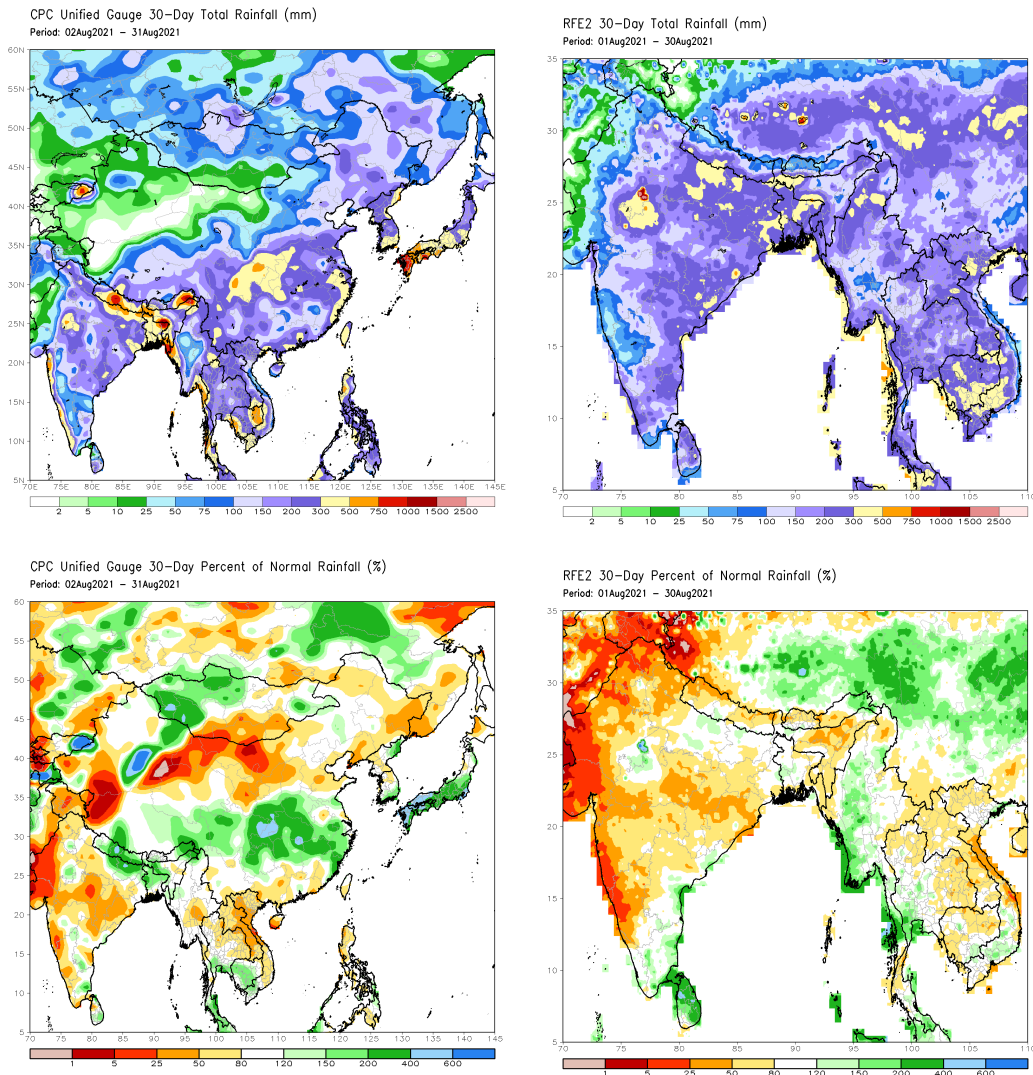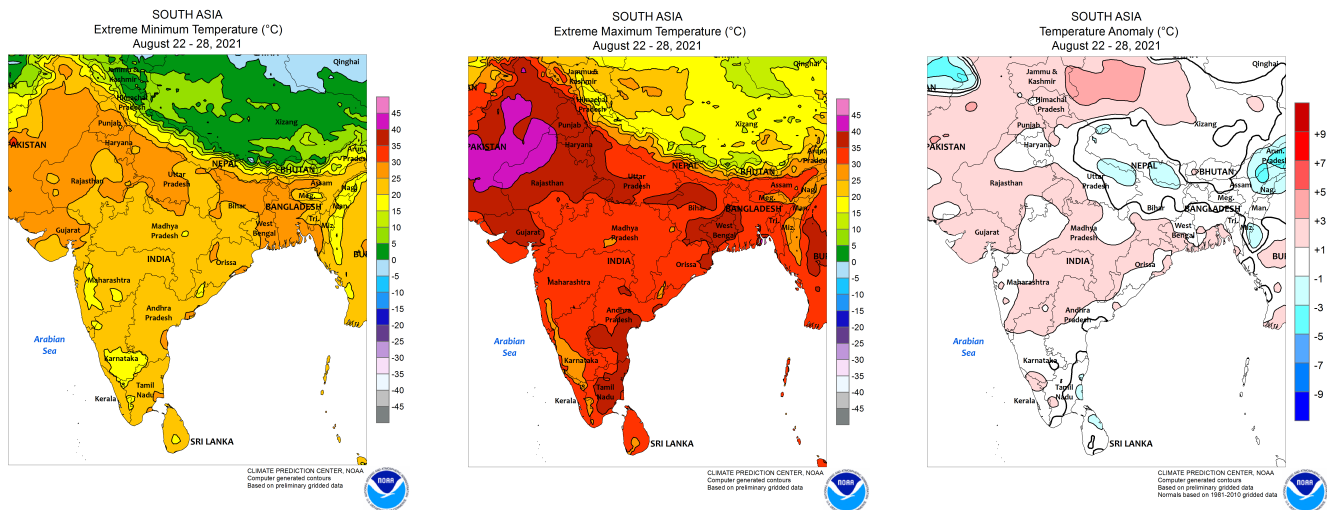
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

Sri-Lanka

Observed Accumulated Precipitation (mm)

Above normal: green
Below normal: brown

Daily Precipitation—Green Bar & Normal—Solid Line (mm/day)

Data Source: CPC (Gauge—Based) Unified Precipitation (Climatology 1981—2010)
(updated on 00Z31AUG2021)

Dekadal (10 Day) Satellite Derived Rainfall Estimates

1-10 Aug 2021
Estimated Precipitation [mm/day]

11-20 Aug 2021
Estimated Precipitation [mm/day]

Weekly Temperature Monitoring

SOUTH ASIA
Extreme Minimum Temperature (°C)
August 22 - 28, 2021

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

SOUTH ASIA
Extreme Maximum Temperature (°C)
August 22 - 28, 2021

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

SOUTH ASIA
Temperature Anomaly (°C)
August 22 - 28, 2021

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data
Normals based on 1981-2010 gridded data
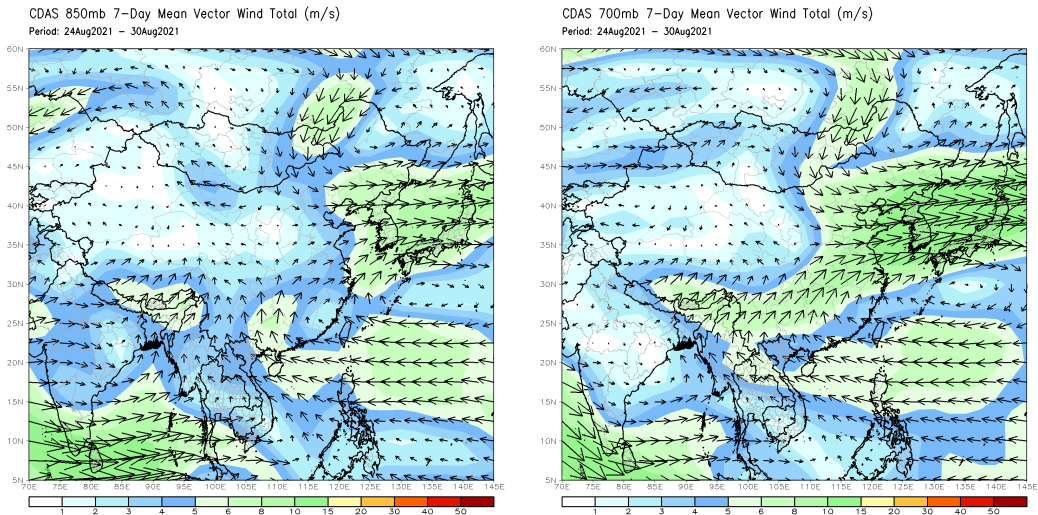
Weekly Wind Monitoring

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.
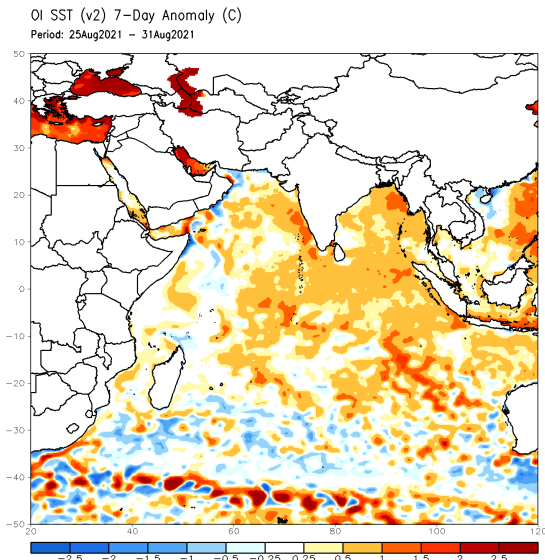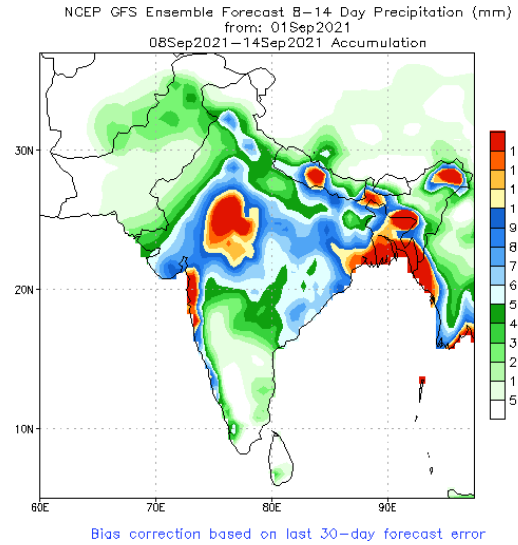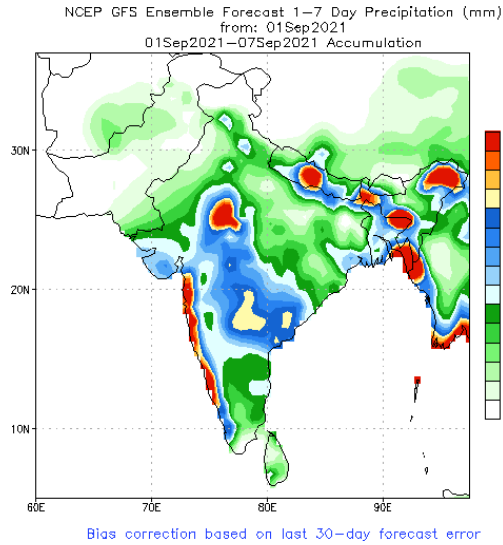

Weekly Average SST Anomalies

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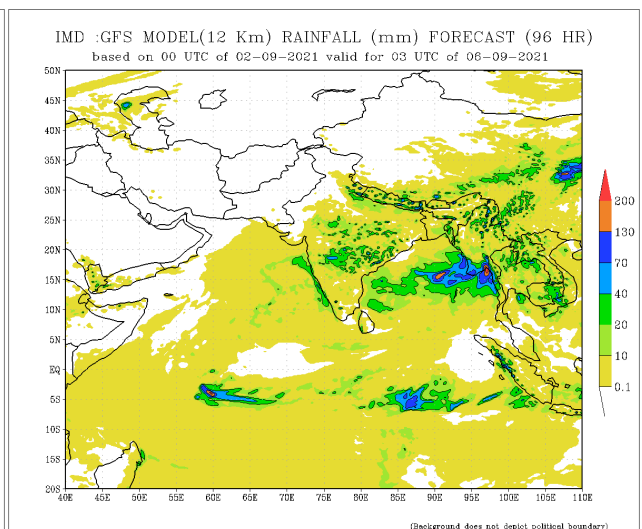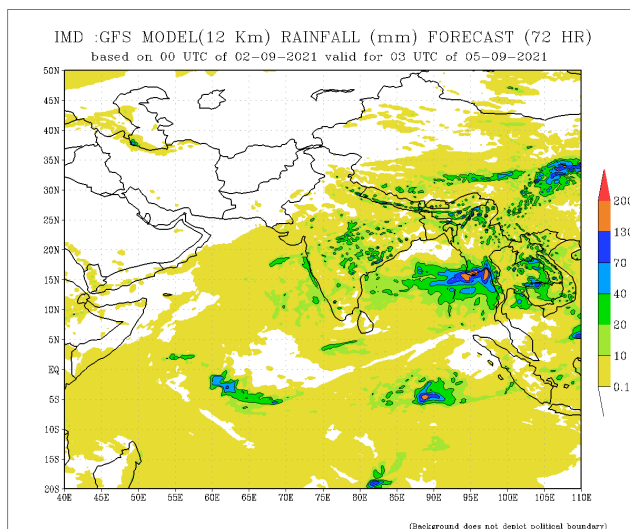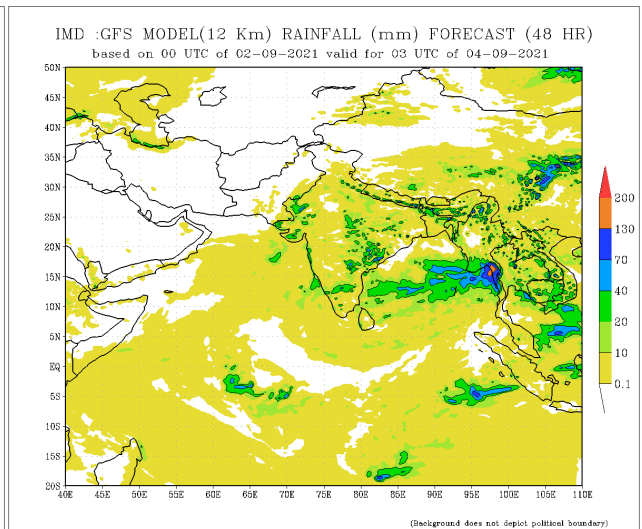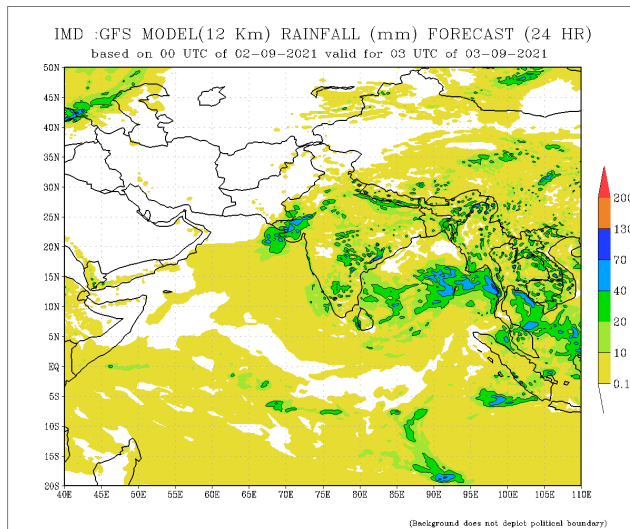

25 Aug 2021

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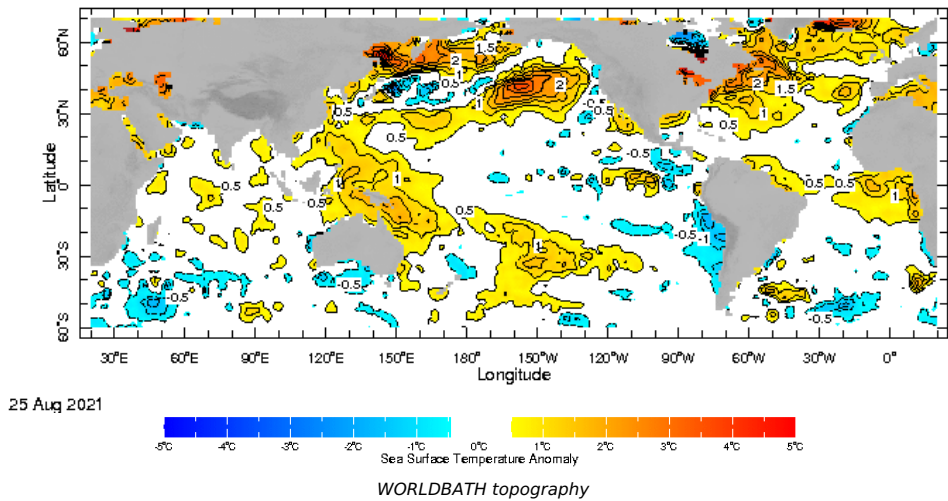
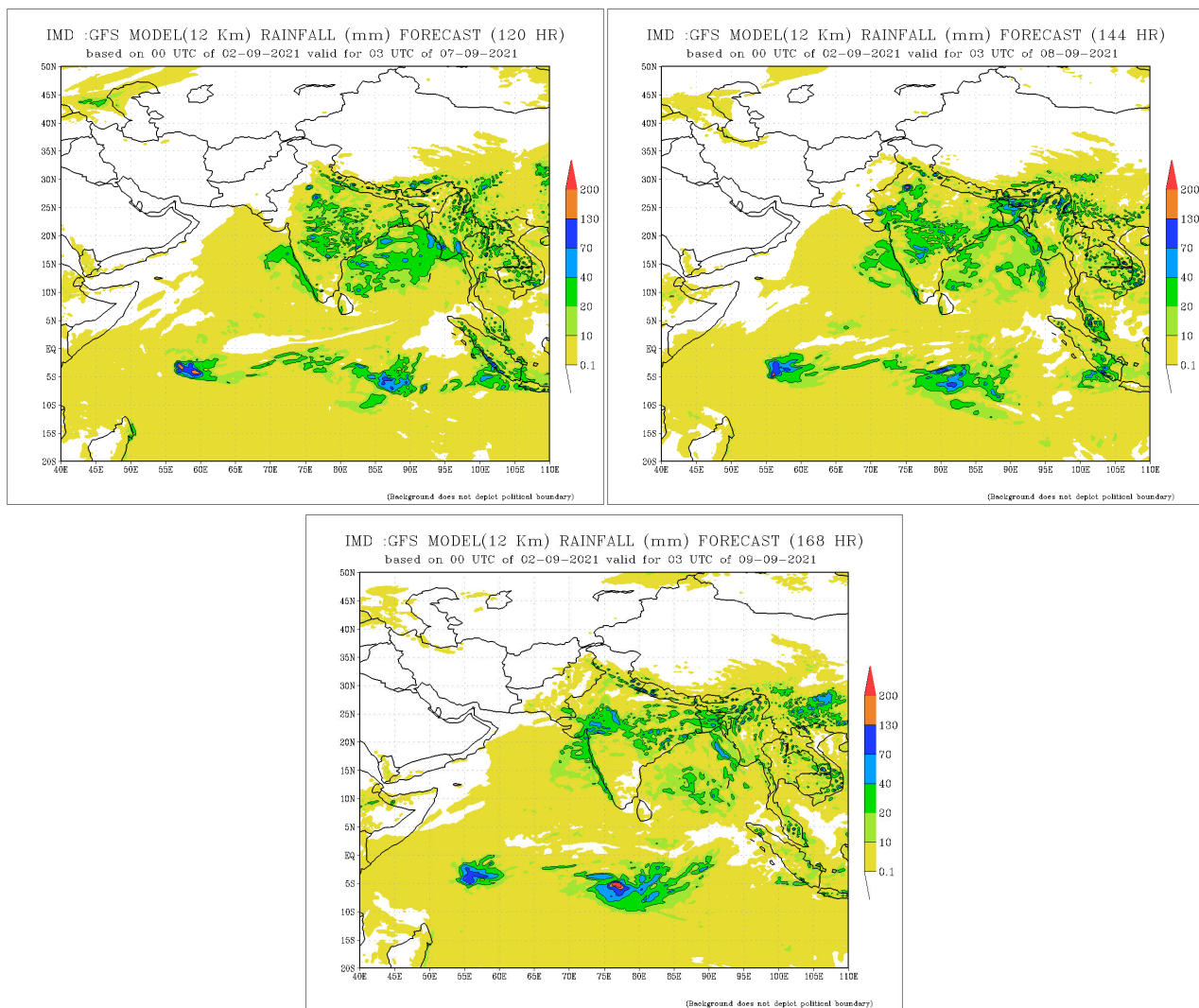Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1—7 Day Precipitation (mm)
from: 01Sep2021
01Sep2021—07Sep2021 Accumulation

Bias correction based on last 30—day forecast error

NCEP GFS Ensemble Forecast 8—14 Day Precipitation (mm)
from: 01Sep2021
08Sep2021—14Sep2021 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 02—09—2021 valid for 03 UTC of 03—09—2021

(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 02—09—2021 valid for 03 UTC of 04—09—2021

(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 02—09—2021 valid for 03 UTC of 05—09—2021

(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 02—09—2021 valid for 03 UTC of 06—09—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 anomolous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.
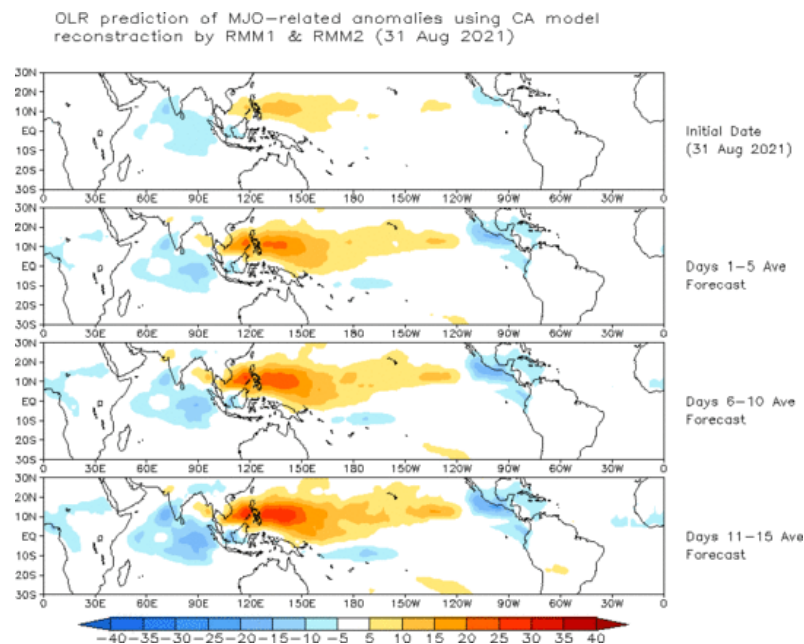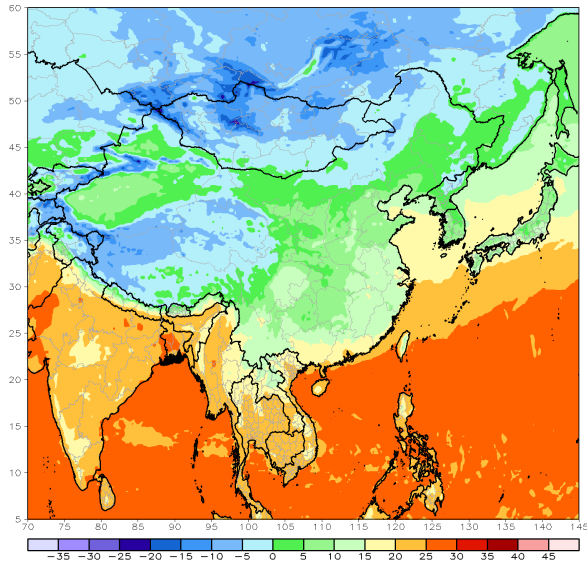
Weekly Temperature Forecast

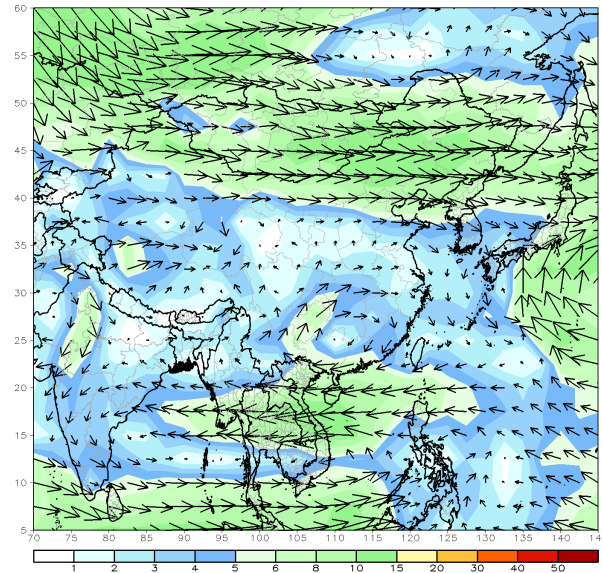Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)
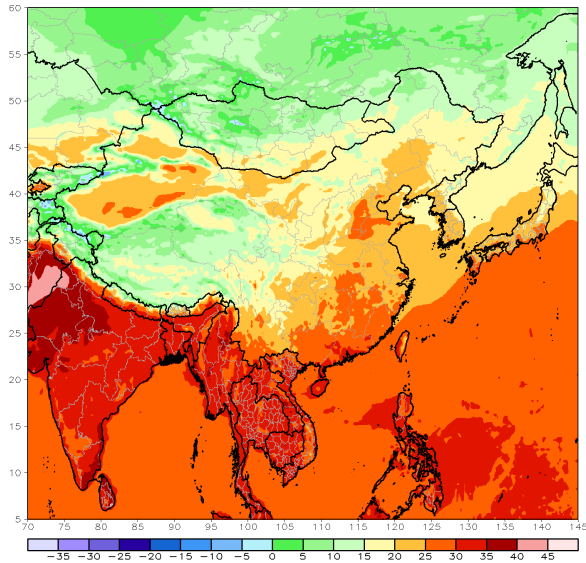
Weekly Wind Forecast

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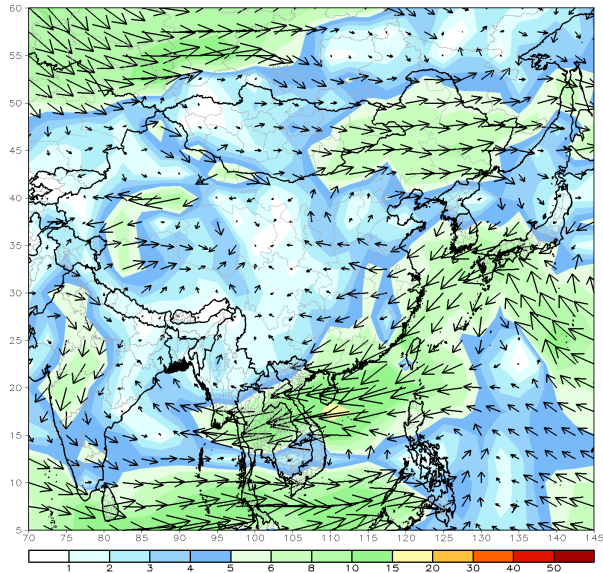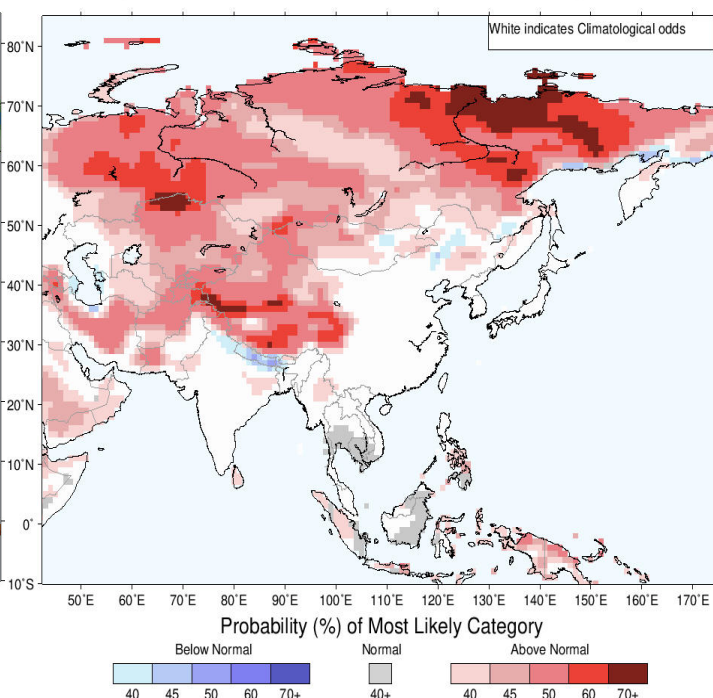
Seasonal Rainfall and Temperature Forecast

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%).

IRI Multi–Model Probability Forecast for Precipitation for September–October–November 2021, Issued August 2021

Probability (%) of Most Likely Category
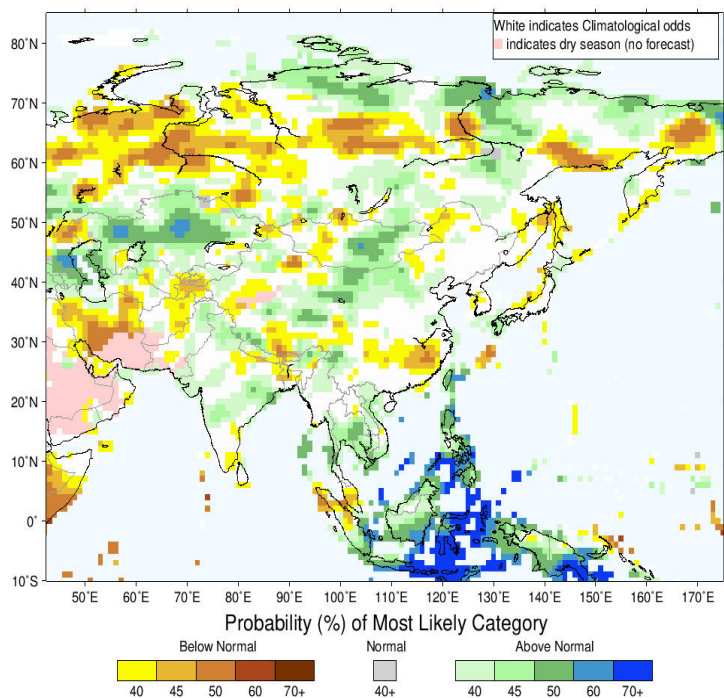
Precipitation Forecast

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

Probability (%) of Most Likely Category

Temperature Forecast