

Experimental Climate Monitoring and Prediction

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Highlights

- The WRF model predicts up to 64 mm of rainfall in Kalutara district on 11th of August.
- Between 2-8 Aug: Rainfall up to 80 mm was recorded in Polonnaruwa, Ampara and Batticaloa districts on the 7th.
- From 30 Jul- 5 Aug: minimum temperature of 20 °C was recorded from Nuwara Eliya district while Northern and Eastern regions of the island recorded a maximum temperature between 30-35 °C.
- From 1-7 Aug: up to 29 km/h, northwesterly winds were experienced by the entire island.
- 0.5 °C above average sea surface temperature was observed in the Northern and Eastern seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On August 2nd, No significant rainfalls were recorded in any part of the island; and adjacent eastern sea up to 80 mm of rainfall. On the 3rd Hatton region in Nuwara Eliya district received up to 20 mm of rainfall. On the 4th Ratnapura district received up to 30 mm of rainfall; Kalutara, Kegalla, Nuwara Eliya and Kandy districts up to 20 mm. On 5th several regions of Galle, Matara and Monaragala districts received up to 20 mm of rainfall. On 6th many of the southern parts of the island received up to 10 mm of rainfall. On 7th Polonnaruwa, Ampara and Batticaloa districts received up to 80 mm of rainfall; Matale, Badulla and Monaragala districts up to 50 mm; Anuradhapura, Trincomalee, Kurunegala and Kandy districts up to 30 mm; and Ratnapura and Nuwara Eliya districts up to 20 mm. On the 8th coastal regions of Batticaloa district received up to 60 mm of rainfall; Vavuniya district up to 30 mm; and Polonnaruwa, Matale, Trincomalee and several regions of Badulla and Monaragala districts up to 20 mm.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 75-100 mm in Polonnaruwa, Batticaloa, Matale, Ampara, Ratnapura, Badulla and Monaragala districts; and up to 50-75 mm in Trincomalee, Anuradhapura, Kurunegala, Kandy, Nuwara Eliya, Colombo and Kalutara districts; and 25-50 mm in Mullaitivu, Vavuniya, Puttalam and Gampaha districts. It shows above average rainfall and up to and 50-100 mm in Polonnaruwa, Ampara and Batticaloa districts; and up to 25-50 mm Trincomalee, Monaragala and Matale districts.

Monthly Monitoring: During July - below average rainfall conditions were experienced in the southern and western regions of the island and above average rainfall in eastern regions. Colombo, Kegalla and Nuwara Eliya districts received up to 150 mm below average rainfall; and Puttalam, Kurunegala, Gampaha, Kandy, Badulla, Monaragala, Hambantota, Ratnapura, Matara and Kalutara districts received up to 120 mm. Trincomalee, Polonnaruwa, Batticaloa and Ampara districts received up to 60 mm of above average rainfall. The CPC Unified Precipitation Analysis tool shows ~100 mm of total rainfall in Batticaloa, Polonnaruwa and Ampara districts; up to ~75 mm Trincomalee, Anuradhapura, Kurunegala, Matale, Kandy, Ratnapura, Kalutara and Galle district; and up to 50 mm in many parts of the island.

Ocean State (Text Courtesy IRI)

Pacific sea state: July 19, 2017

In mid-July 2017, the tropical Pacific remained in an ENSO-neutral state, with SSTs near the El Niño threshold in the east-central tropical Pacific but the atmosphere maintaining ENSO-neutral patterns. The collection of latest ENSO prediction models indicates ENSO-neutral as the most likely condition during summer through fall and into winter with chances for El Niño development at about 35-40%.

Indian Ocean State

0.5 °C above average sea surface temperature was observed in the Northern and Eastern seas around Sri Lanka.

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 9th – 15th Aug: Total rainfall between 25-35 mm in Batticaloa and Ampara districts; and between 15-25 mm in Jaffna, Mullaitivu, Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Trincomalee, Badulla, Monaragala, Kandy, Nuwara Eliya, Gampaha, Kegalla, Ratnapura and Galle districts.

From 16th – 22nd Aug: Total rainfall between 25-35 mm in Kegalla and Ratnapura districts; and between 25-35 mm in Gampaha, Matale, Nuwara Eliya, Galle and Matara districts.

IMD WRF & IRI Model Forecast:

11th Aug: Up to 64 mm of rainfall in Kalutara district; up to 35 mm of rainfall in Puttalam, Kurunegala, Kegalla, Gampaha, Colombo, Ratnapura, Galle and Matara districts; and up to 8 mm in many parts of the island.

12th Aug: Up to 36 mm of rainfall in Puttalam, Kurunegala, Matale, Kegalla, Ratnapura, Gampaha, Colombo, Kalutara and Galle district; and up to 8 mm of rainfall in many parts of the island.

Seasonal Prediction: IRI Multi Model Probability Forecast

Apr to Jun: the total 3-month precipitation shall be climatological for the whole country. The 3-month temperature has more than 70-80% likelihood in the whole of the island of being in the above-normal tercile.

MJO based OLR predictions

For the next 15 days:

MJO shall not have a significant impact on the rainfall in Sri Lanka for the next 10 days and shall suppress the rainfall in the following 5 days.

¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

FECT BLOG

Past reports available at <http://fectsl.blogspot.com/> and <http://fectsl.wordpress.com/>

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Weekly Hydro- Meteorological Report for Sri Lanka

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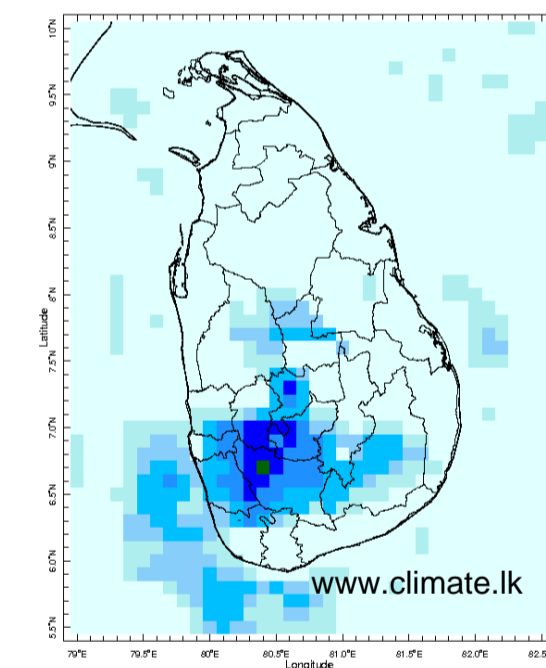
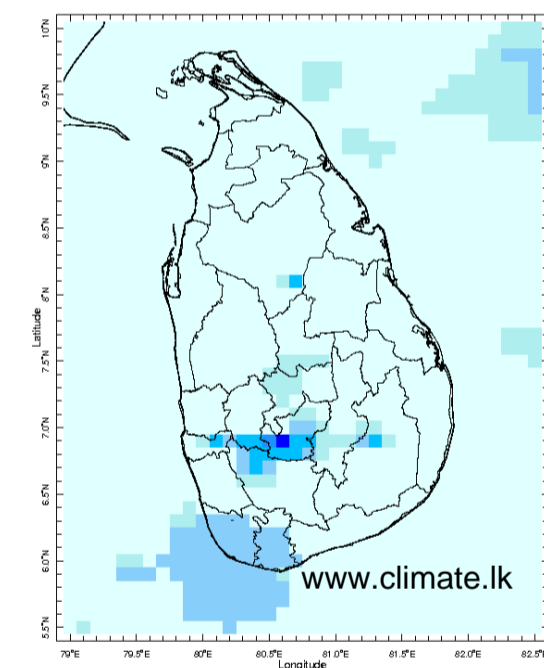
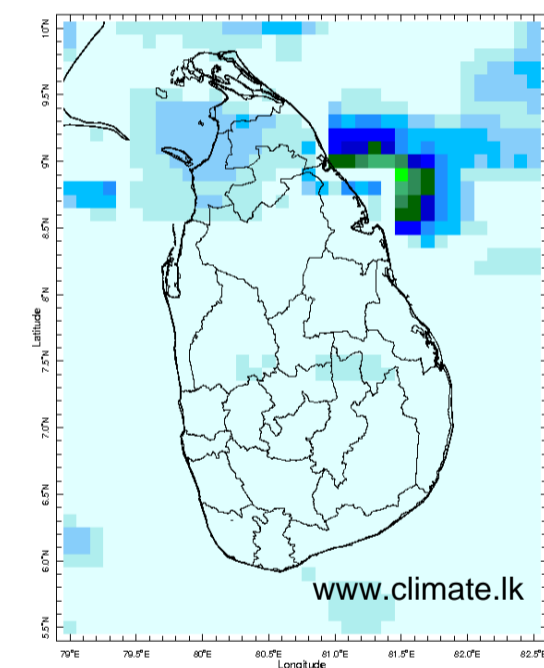
2. Predictions

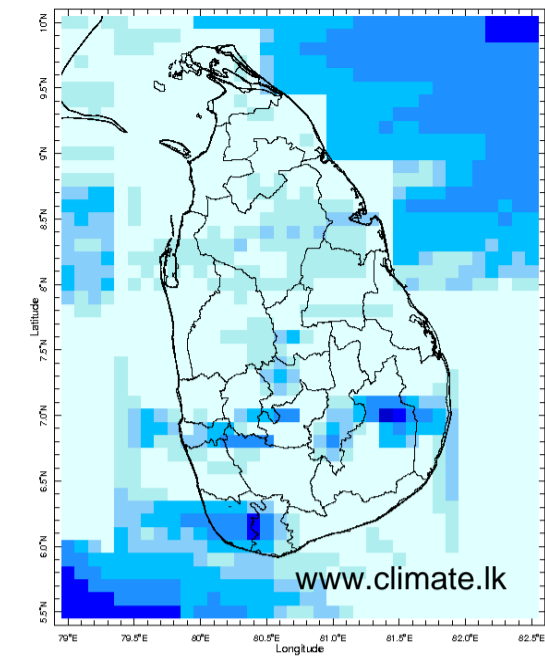
- NCEP GFS Ensemble 1-14 day Rainfall Predictions
- WRF Model Rainfall Forecast from IMD Chennai
- Weekly Precipitation Forecast from IRI
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MONITORING

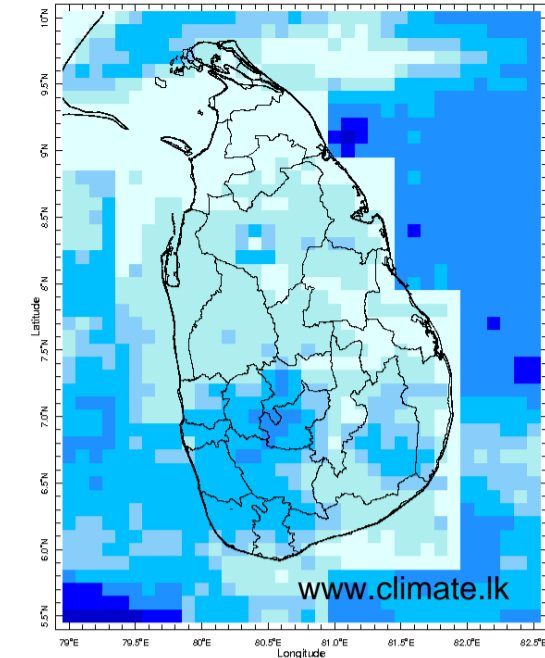
Daily Rainfall Monitoring

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

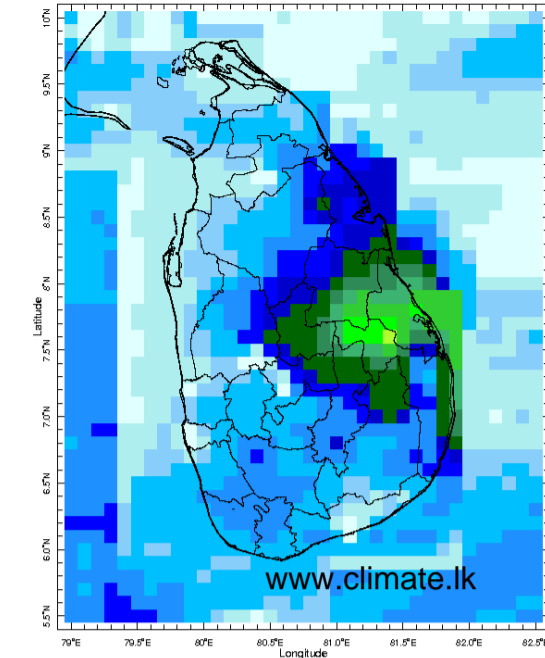




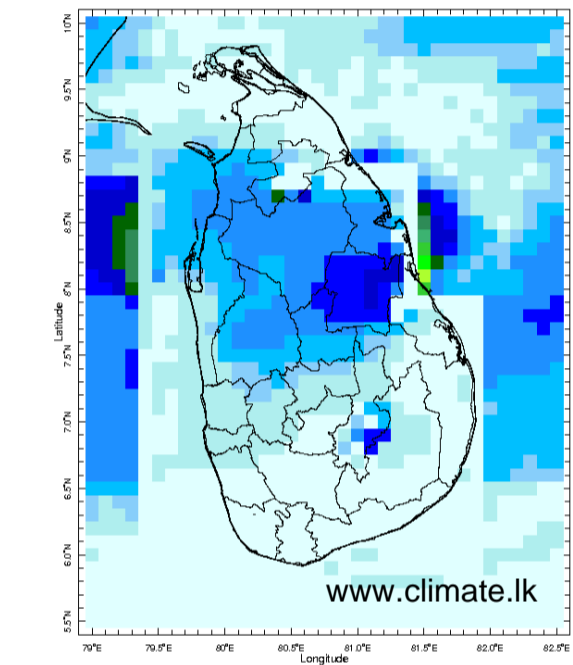
5 Aug 2017



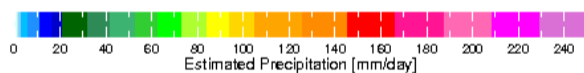
6 Aug 2017



7 Aug 2017

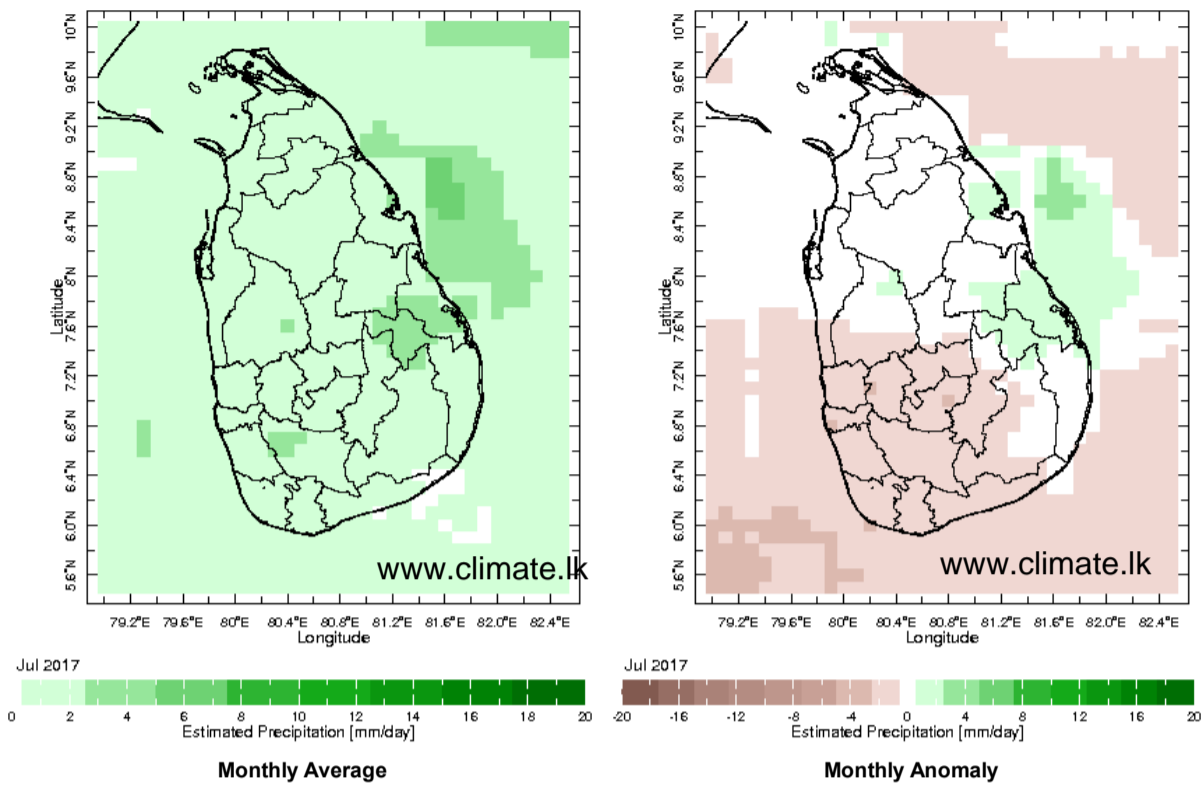


8 Aug 2017

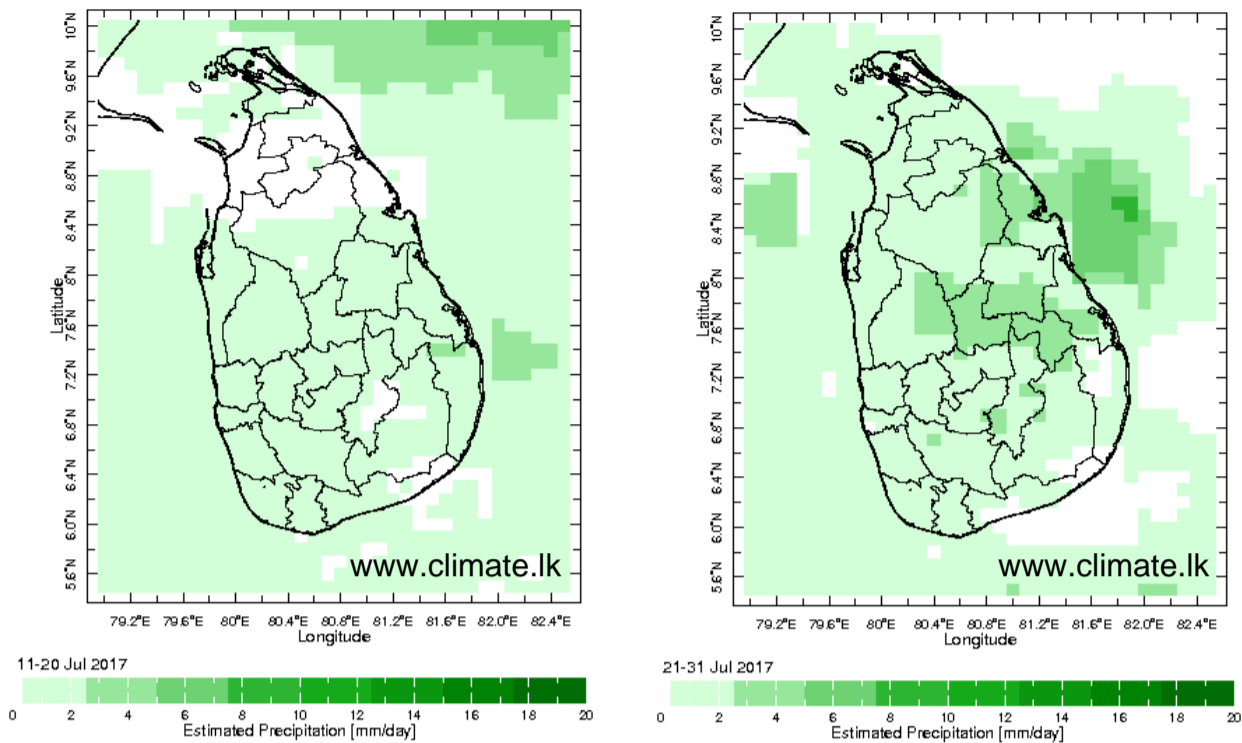


Monthly Rainfall Monitoring

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

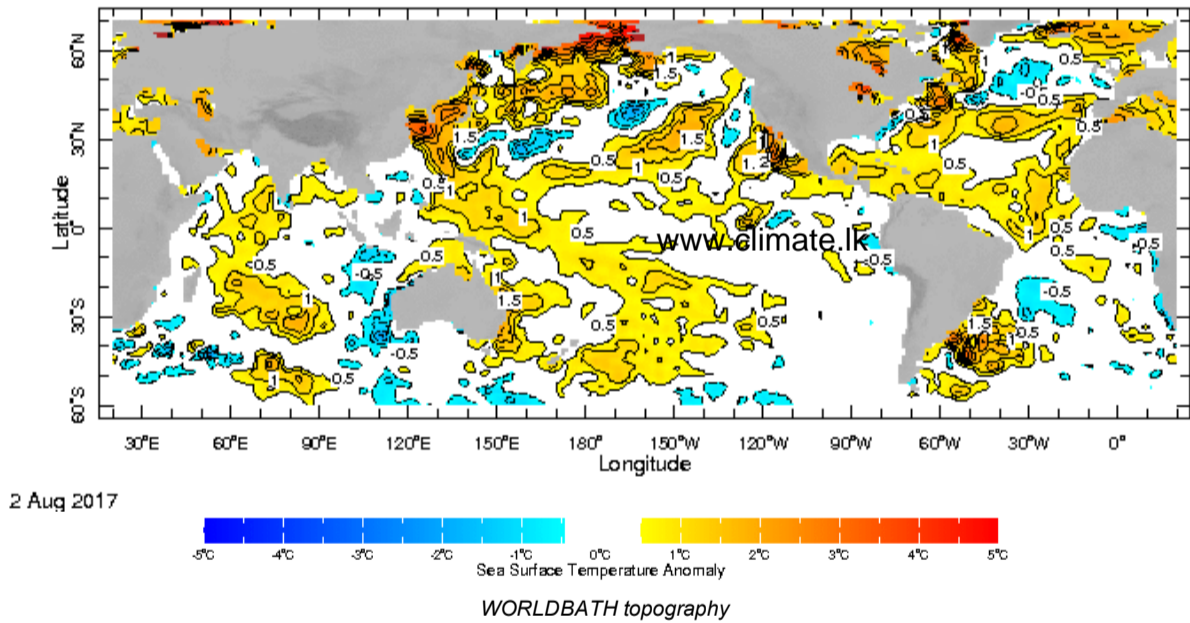


Dekadal (10 Day) Satellite Derived Rainfall Estimates

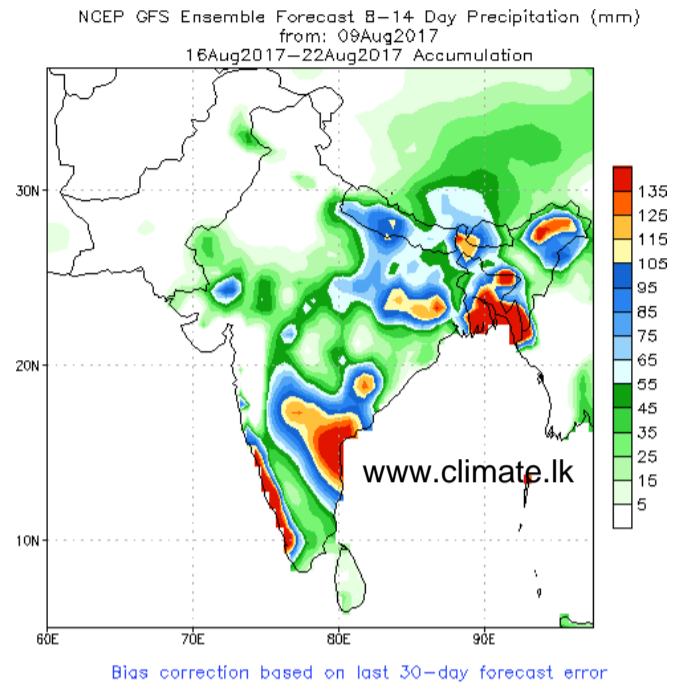
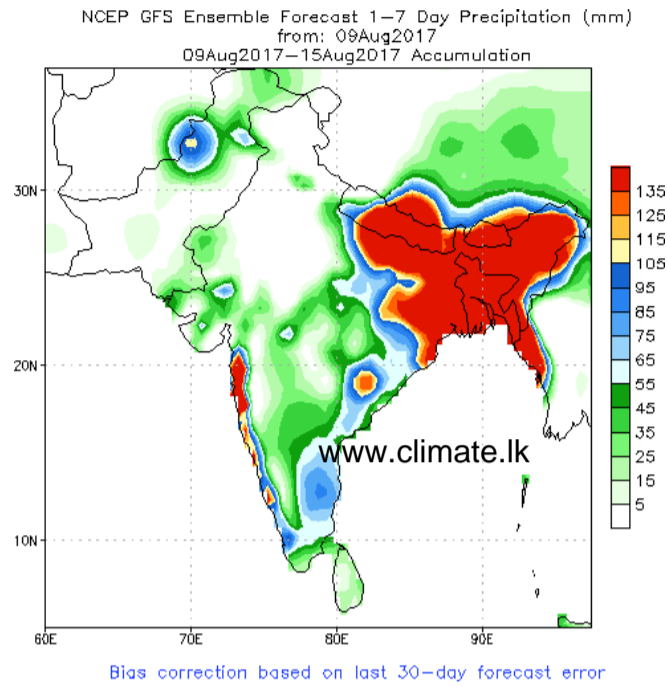


Weekly Average SST Anomalies

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

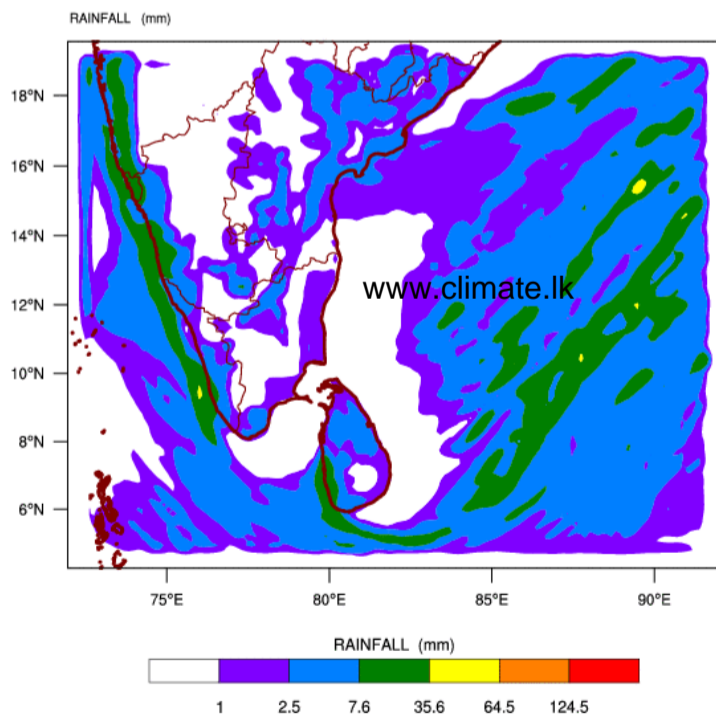


NCEP GFS 1- 14 Day prediction

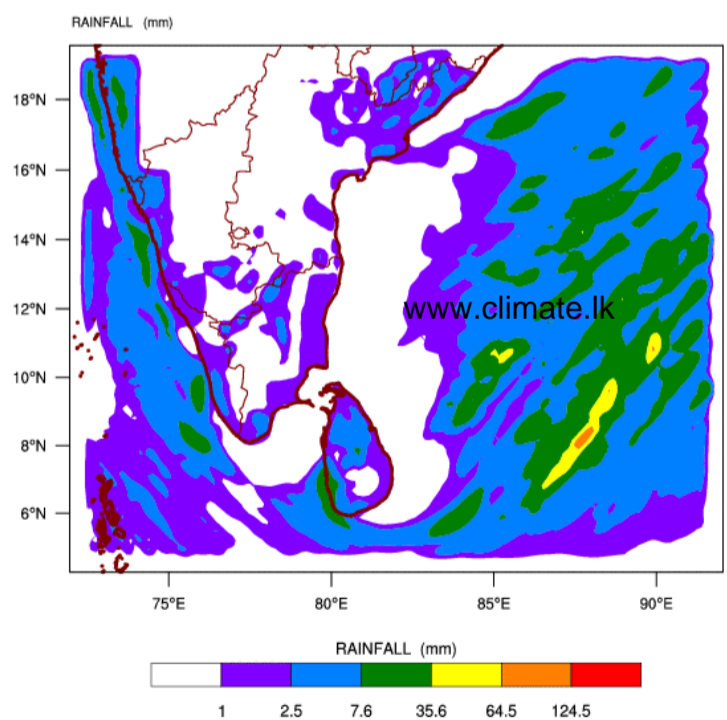


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 10-08-2017 valid for 03 UTC of 12-08-2017

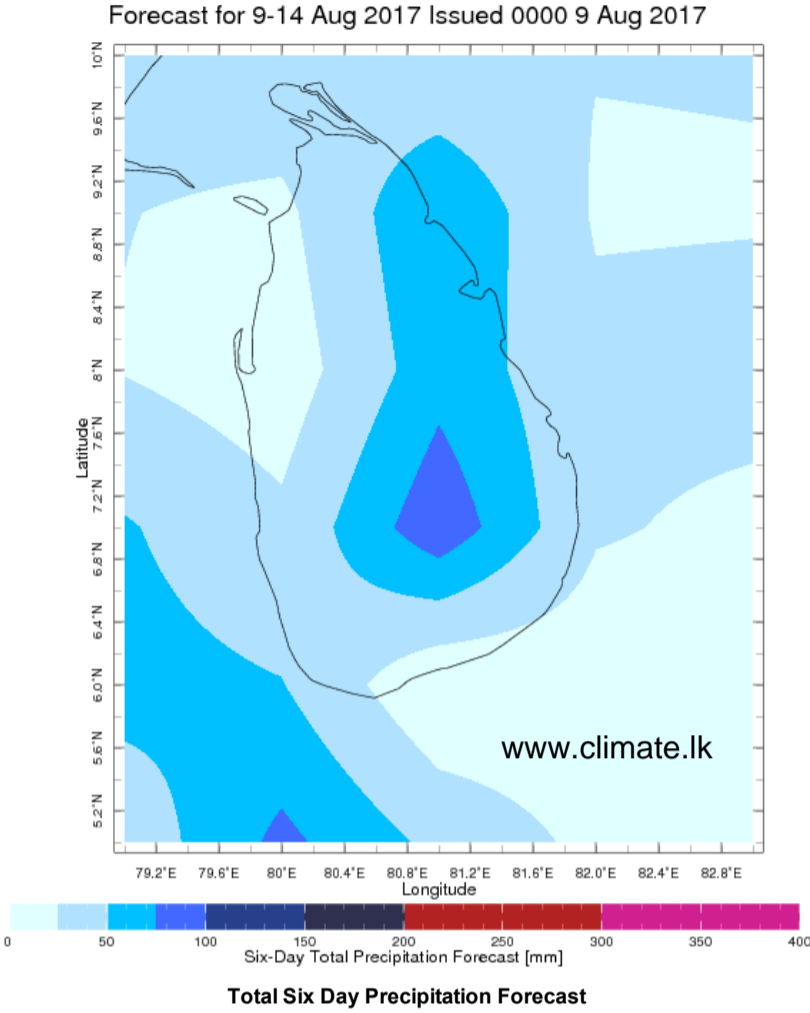
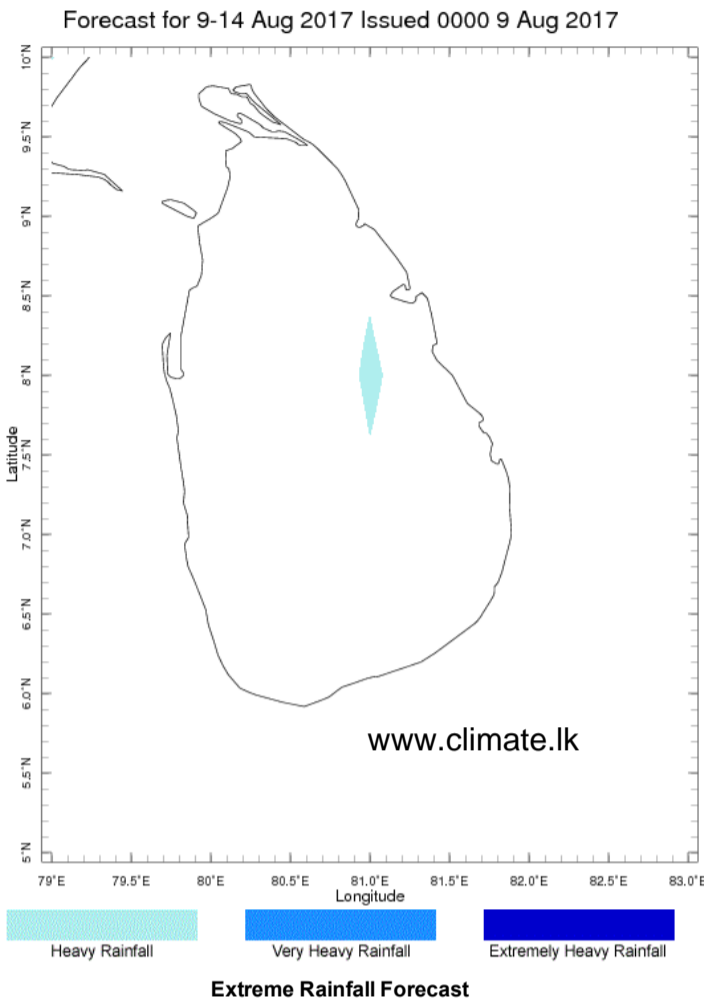


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 10-08-2017 valid for 03 UTC of 13-08-2017



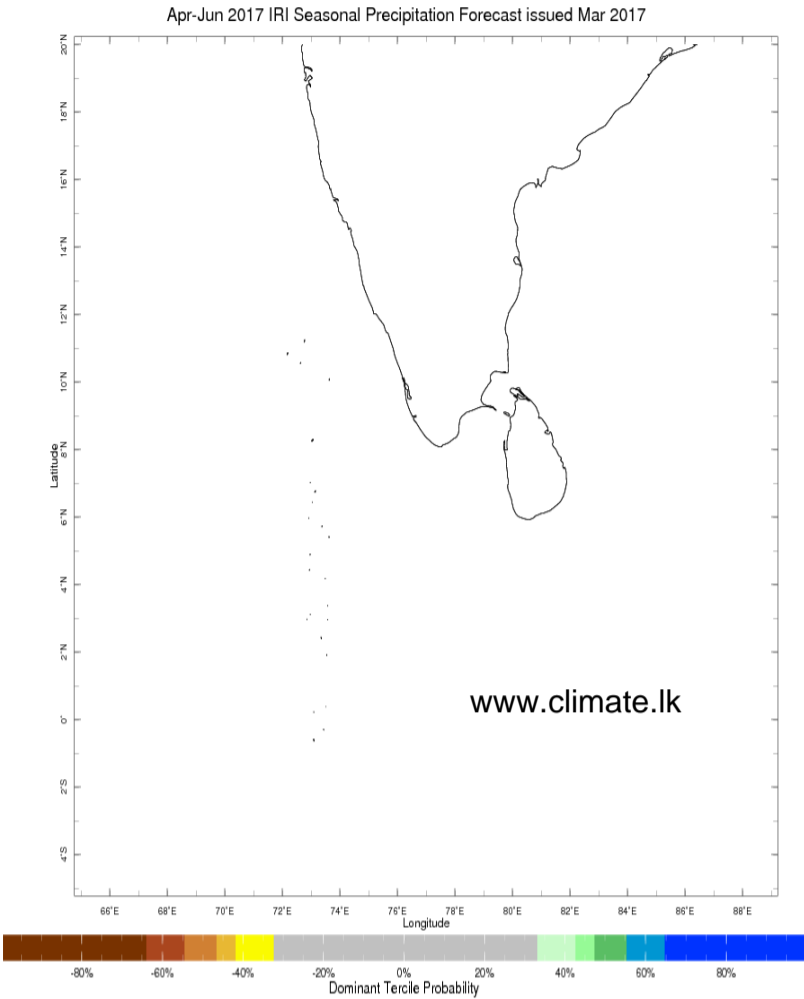
Weekly Rainfall Forecast from IRI

Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

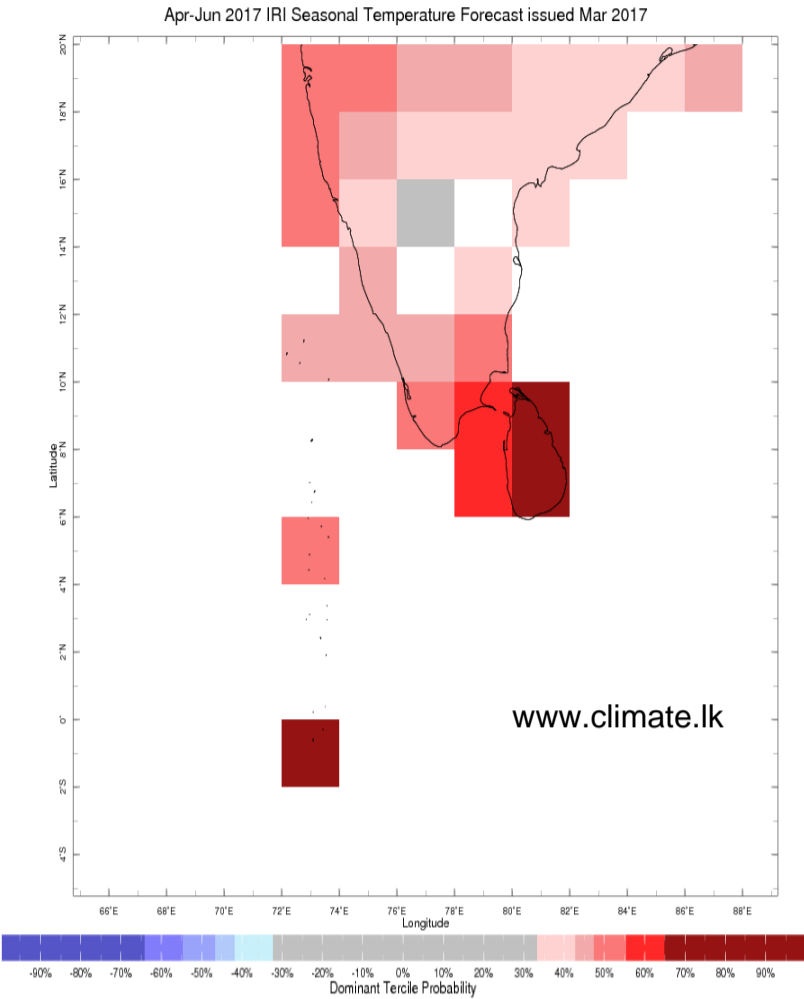


Seasonal Rainfall and Temperature Forecast

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

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