

Experimental Climate Monitoring and Prediction

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Highlights

- The WRF model predicts up to 124 mm of rainfall in Ratnapura district on 19th of August.
- Between 9-15 Aug: Rainfall up to 160 mm was recorded in Ampara and Batticaloa districts on the 12th.
- From 6-12 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 8-14 Aug: up to 21 km/h, northwesterly winds were experienced by the central and southern regions of the island; and up to 18 km/h in the northern regions.
- 0.5 °C above average sea surface temperature was observed in the Northern and Southern seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On August 9th, Badulla district received up to 30 mm of rainfall; Polonnaruwa, Ampara and Monaragala districts received up to 20 mm; and many parts of the island up to 10 mm. On the 10th Monaragala district received up to 100 mm of rainfall; Ampara, Badulla, Mullaitivu and Mannar districts up to 50 mm; Vavuniya district up to 40 mm; Puttalam, Anuradhapura, Batticaloa and Trincomalee districts up to 30 mm; and Kurunegala, Polonnaruwa, Matale, Kandy and Nuwara Eliya districts up to 20 mm. No significant rainfalls were recorded in any part of the island on the 11th. On the 12th Ampara and Batticaloa districts received up to 160 mm of rainfall; Anuradhapura district up to 100 mm; Polonnaruwa and Badulla districts up to 90 mm; Jaffna, Kilinochchi, Mannar, Vavuniya, Puttalam, Kurunegala, Matale and Kandy districts up to 50 mm; and Nuwara Eliya districts up to 30 mm. On 13th Anuradhapura district received up to 50 mm of rainfall; Vavuniya district up to 40 mm; Kilinochchi, Mullaitivu and Mannar districts up to 30 mm; Jaffna, Trincomalee, Ampara, Monaragala and several regions of Puttalam and Kurunegala districts up to 20 mm. On 14th coastal regions of Batticaloa district received up to 50 mm of rainfall; Anuradhapura, Trincomalee, Polonnaruwa, Jaffna and Kilinochchi districts up to 20 mm. On 15th Jaffna district received up to 20 mm of rainfall.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 75-100 mm in Mullaitivu, Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Trincomalee, Badulla, Monaragala and Ampara districts; and up to 50-75 mm in Jaffna, Kilinochchi, Puttalam, Matale, Kandy and Kurunegala districts; and 25-50 mm in Kegalla, Nuwara Eliya and Hambantota districts. It shows above average rainfall up to and 100-200 mm in Anuradhapura, Polonnaruwa, Ampara and Batticaloa districts; and up to 50-100 mm Mannar, Vavuniya, Kilinochchi, Mullaitivu, Trincomalee, Badulla and Monaragala districts. It also shows below average rainfalls 25-50 mm in Colombo, Kalutara, Galle and Ratnapura districts; and up to 10-25 mm Gampaha, Kegalla, Matara and Hambantota 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: August 10, 2017

In mid-August 2017, the tropical Pacific remained in an ENSO-neutral state, with near-average SSTs in the east-central tropical Pacific and the atmosphere maintaining ENSO-neutral patterns. The collection of latest ENSO prediction models indicates ENSO-neutral as the most likely condition through Northern Hemisphere fall and into winter with chances for El Niño development one-half or less (i.e., less than about 25% each) the chances for neutral.

Indian Ocean State

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

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 16th – 22nd Aug: Total rainfall between 35-45 mm in Batticaloa and Ampara districts; between 25-35 mm in Jaffna, Mullaitivu, Polonnaruwa and Trincomalee, districts; and between Mannar, Kilinochchi, Vavuniya, Anuradhapura, Badulla and Monaragala districts.

From 23th – 29th Aug: Total rainfall between 35-45 mm in Ampara and Batticaloa districts; and between 25-35 mm in Polonnaruwa, Badulla and Monaragala districts.

IMD WRF & IRI Model Forecast:

18th Aug: Up to 36 mm of rainfall in Puttalam, Kurunegala, Gampaha, Colombo, Kalutara, Galle, Kegalla and Ratnapura districts; and up to 8 mm in many parts of the island.

19th Aug: Up to 124 mm of rainfall in Ratnapura district; up to 64 mm Kegalla, Colombo and Kalutara districts; 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.

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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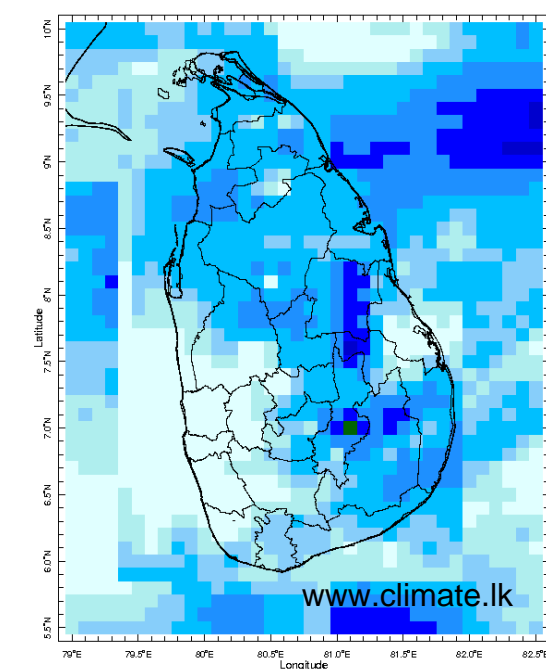
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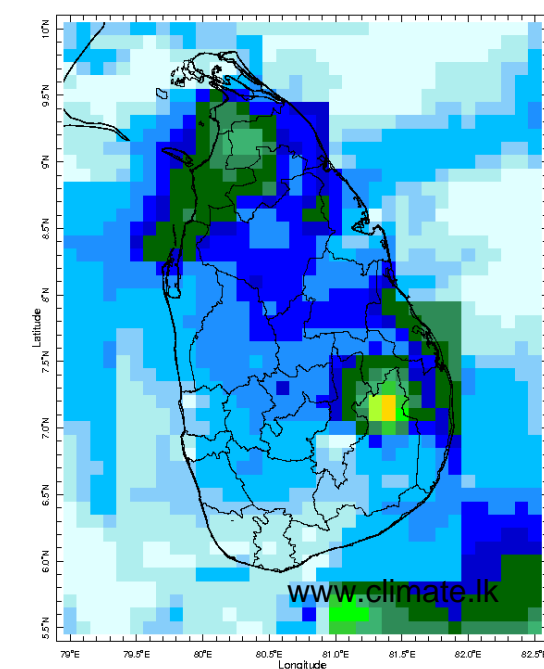
MONITORING

Daily Rainfall Monitoring

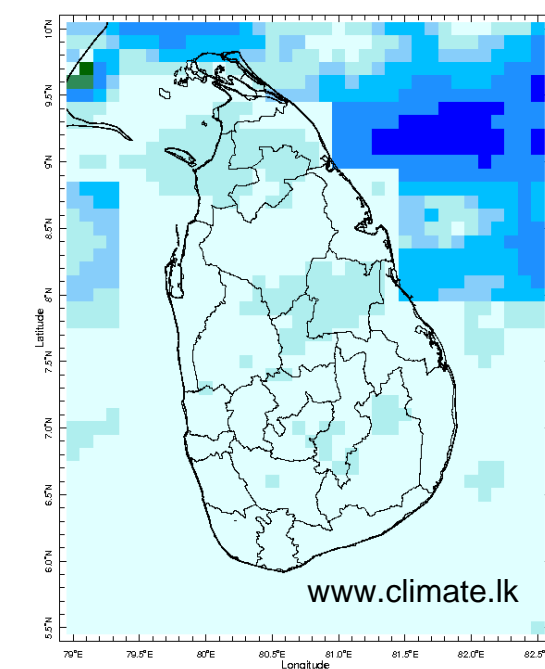
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



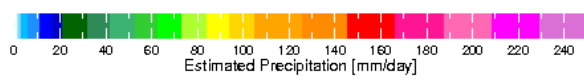
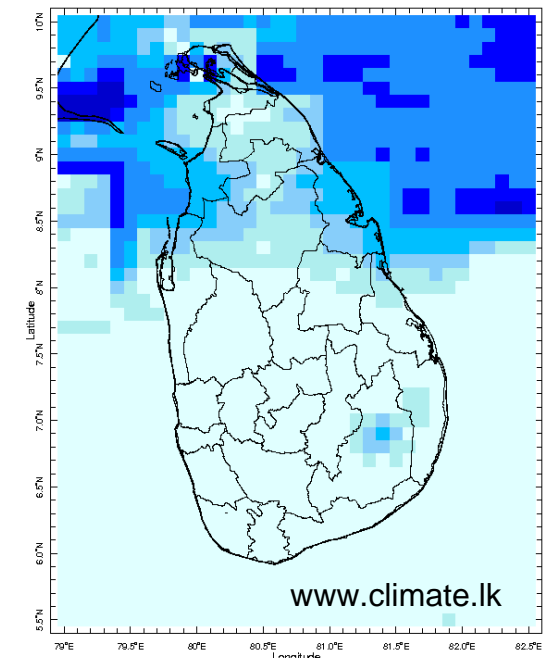
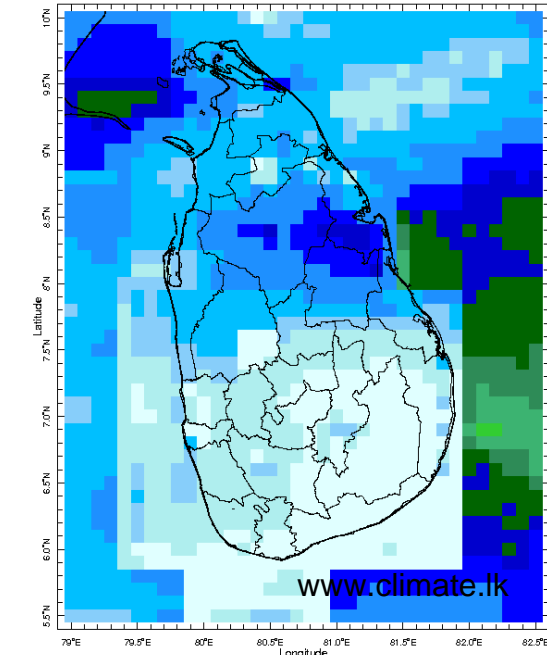
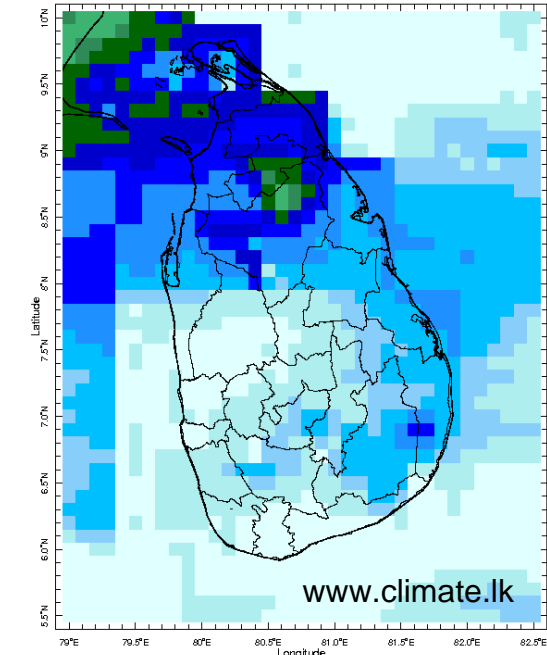
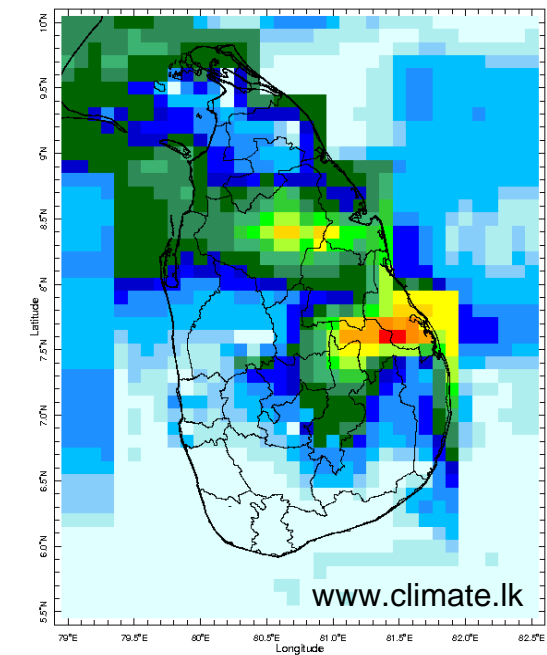
9 Aug 2017



10 Aug 2017

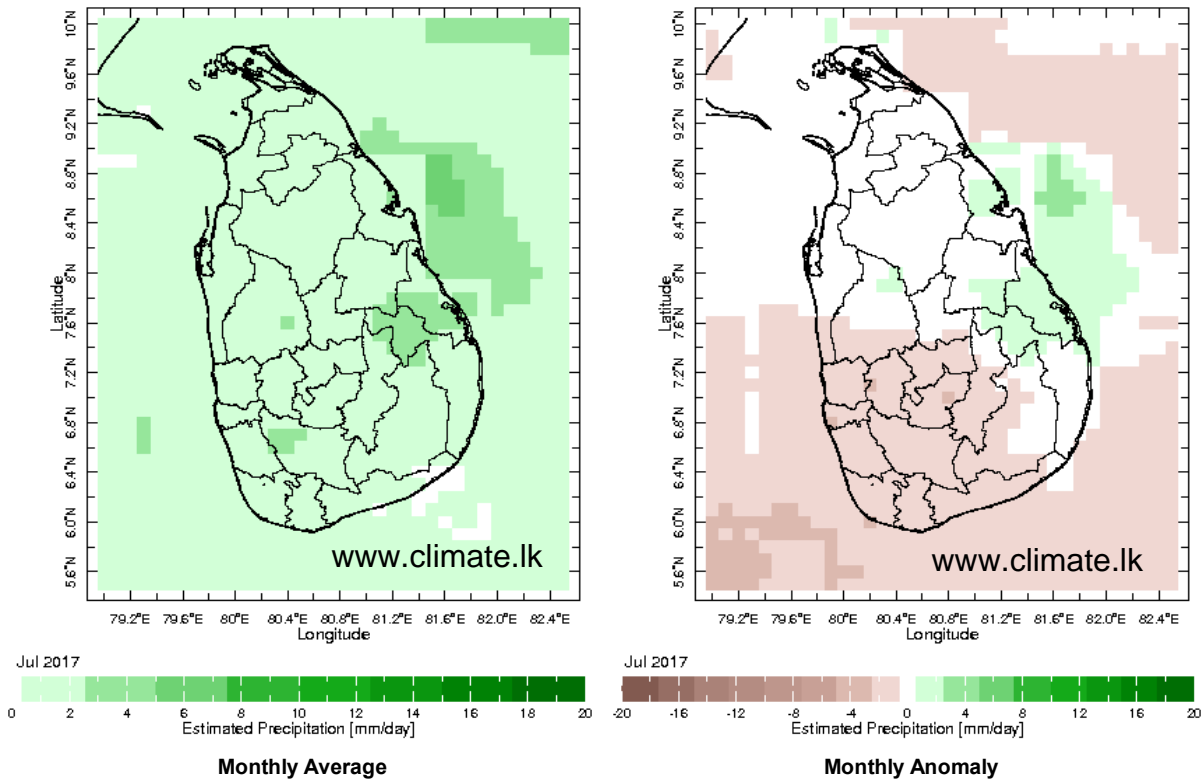


11 Aug 2017

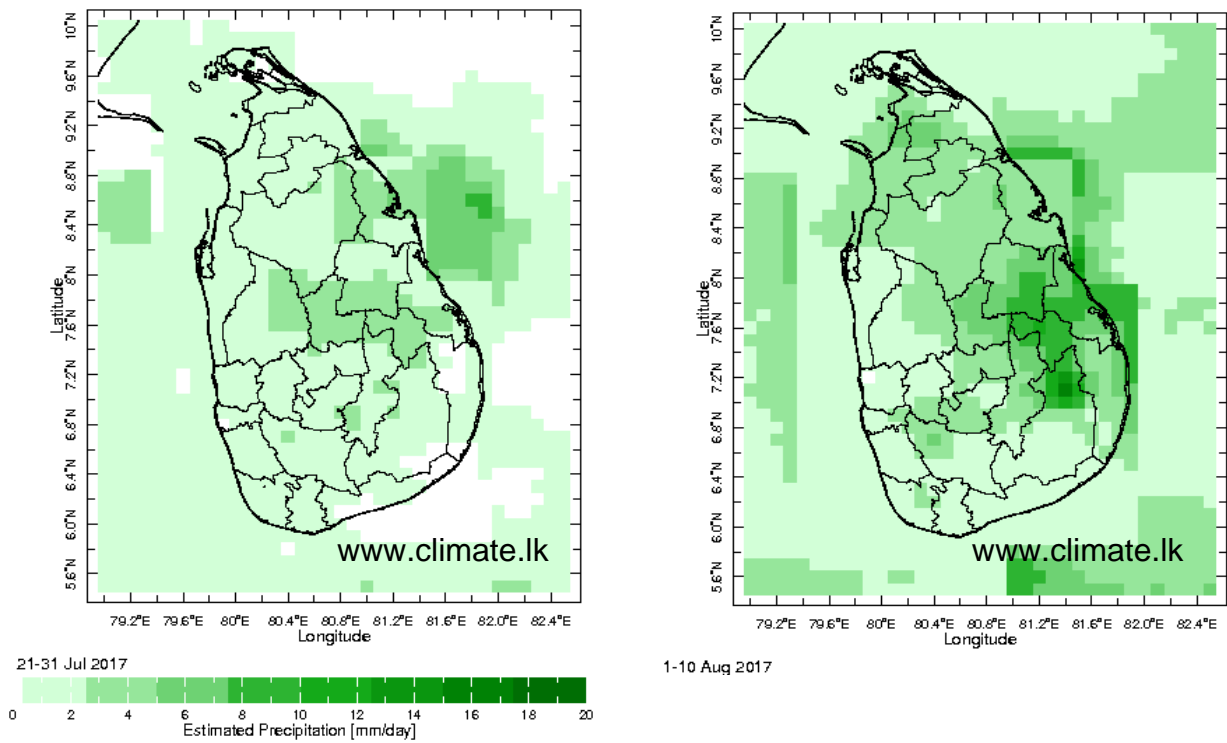


Monthly Rainfall Monitoring

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

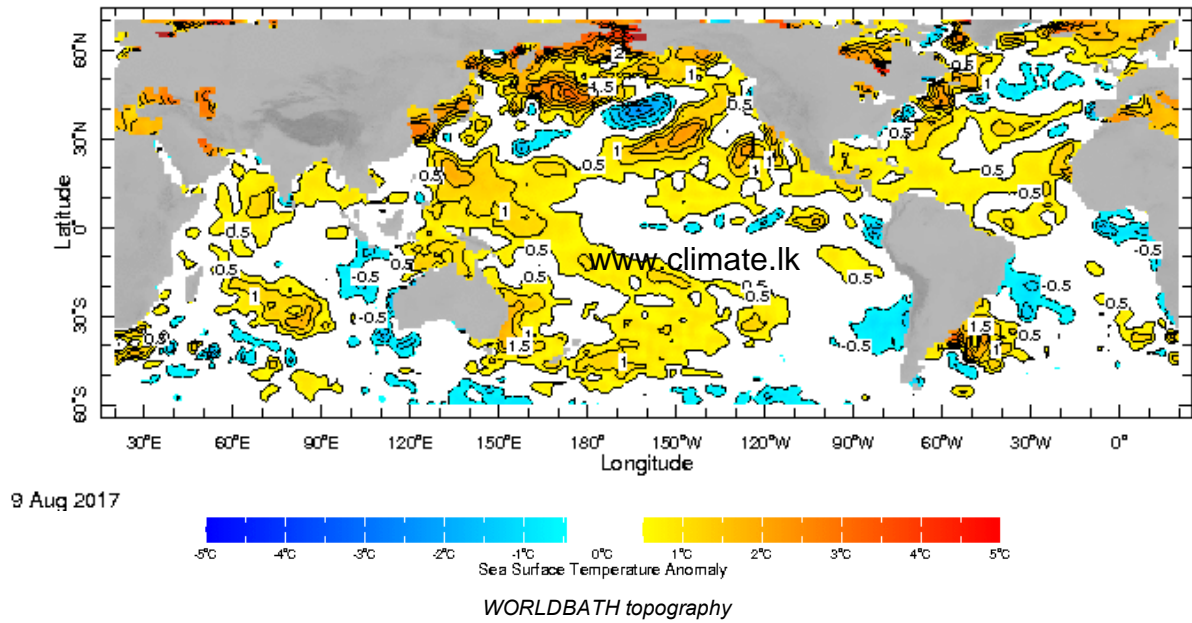


Dekadal (10 Day) Satellite Derived Rainfall Estimates

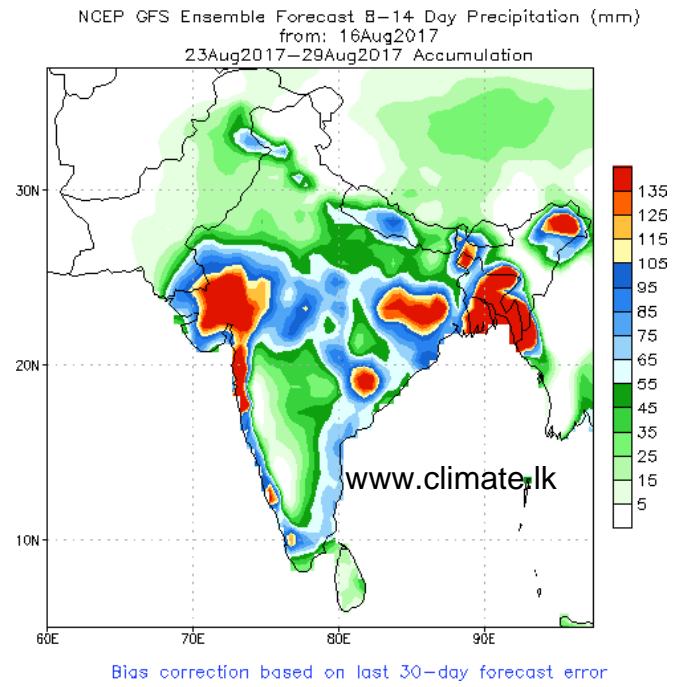
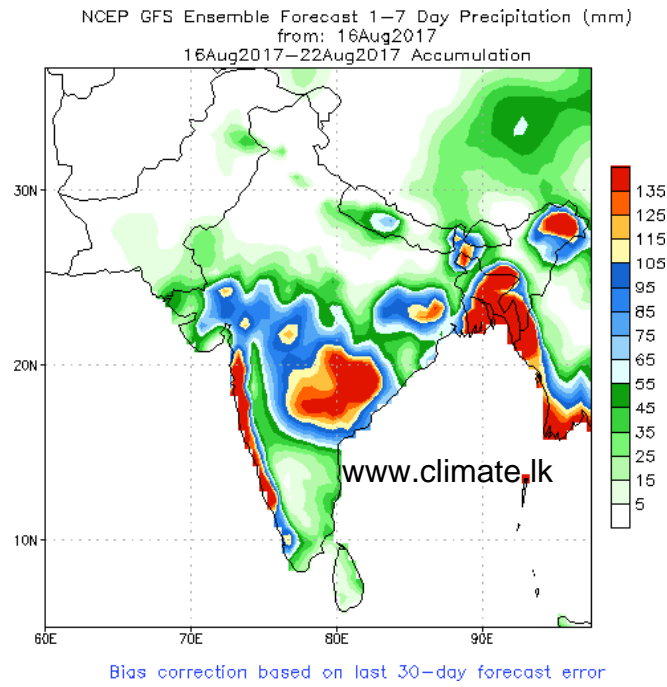


Weekly Average SST Anomalies

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

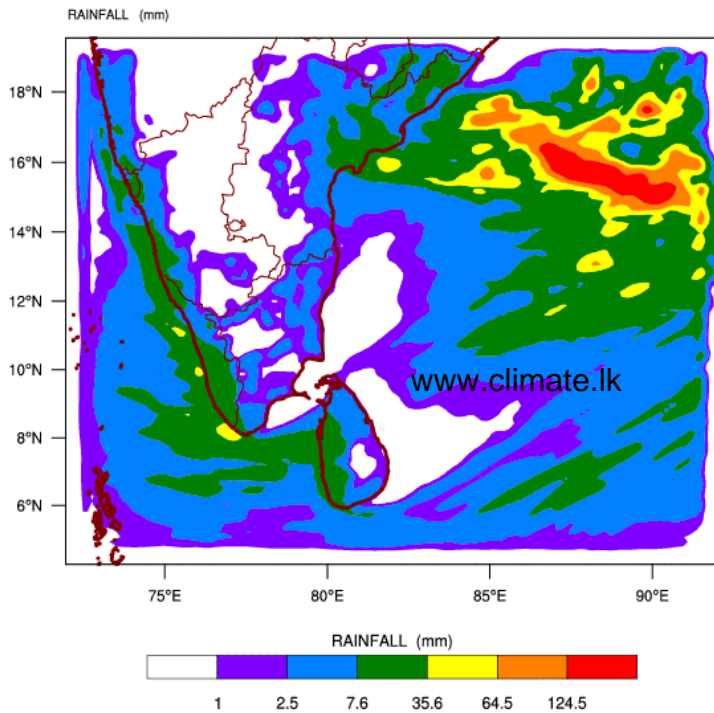


NCEP GFS 1- 14 Day prediction

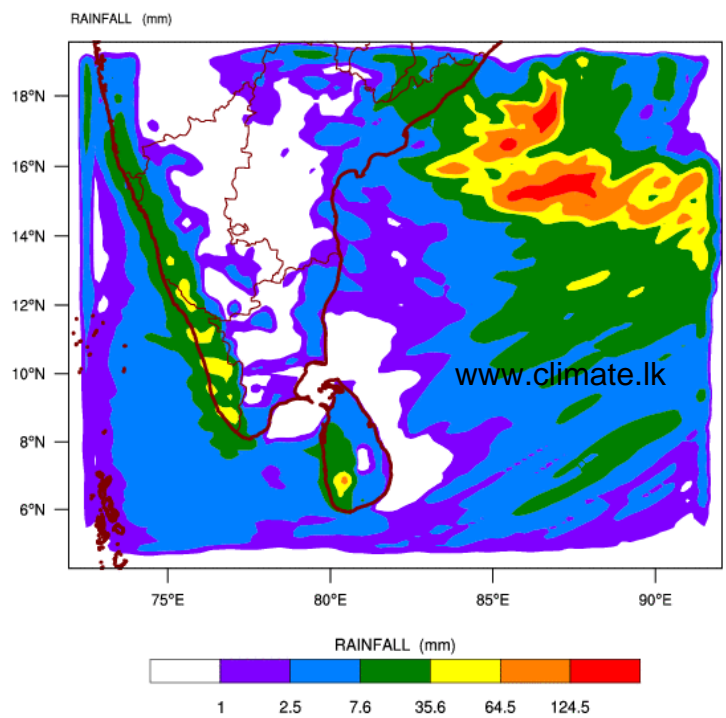


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 16-08-2017 valid for 03 UTC of 18-08-2017

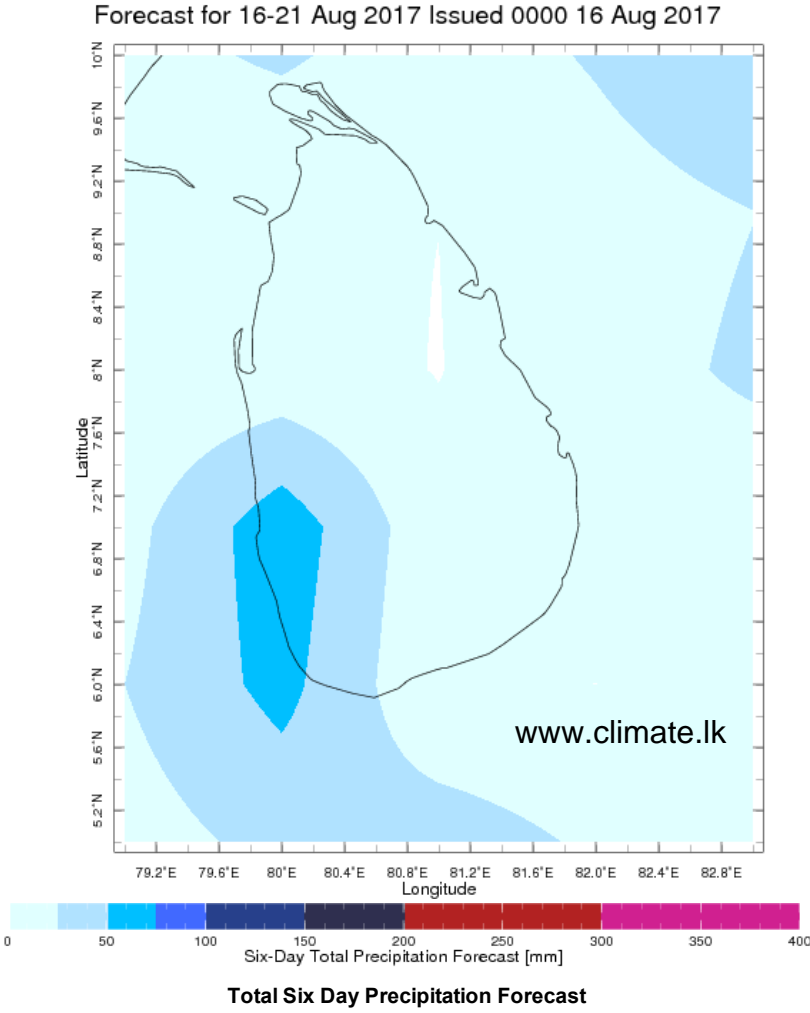
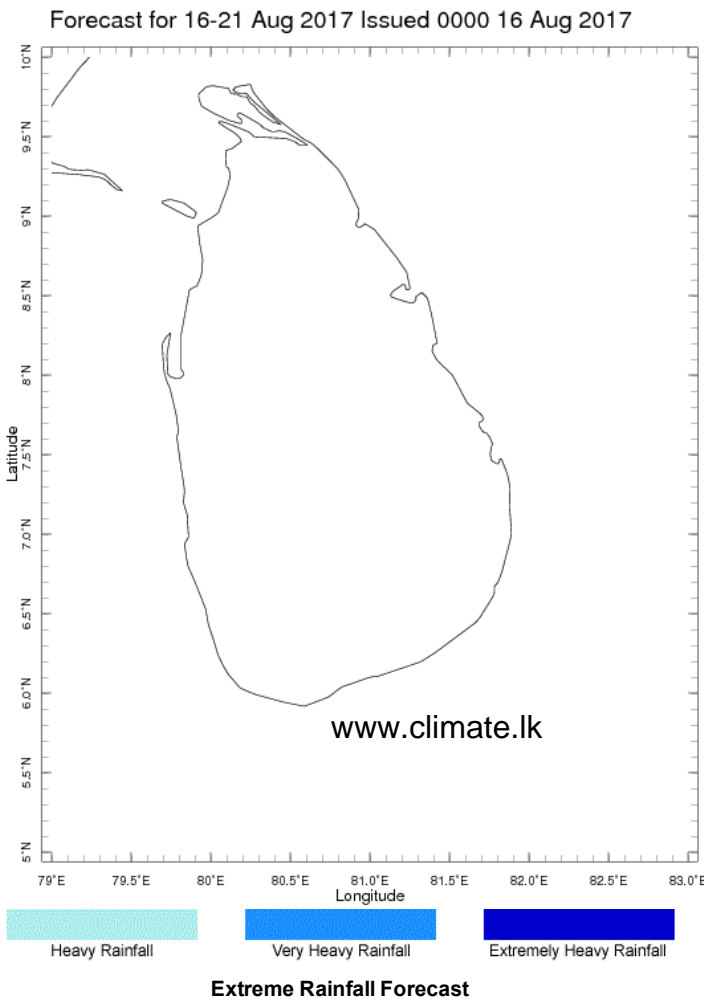


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 16-08-2017 valid for 03 UTC of 19-08-2017



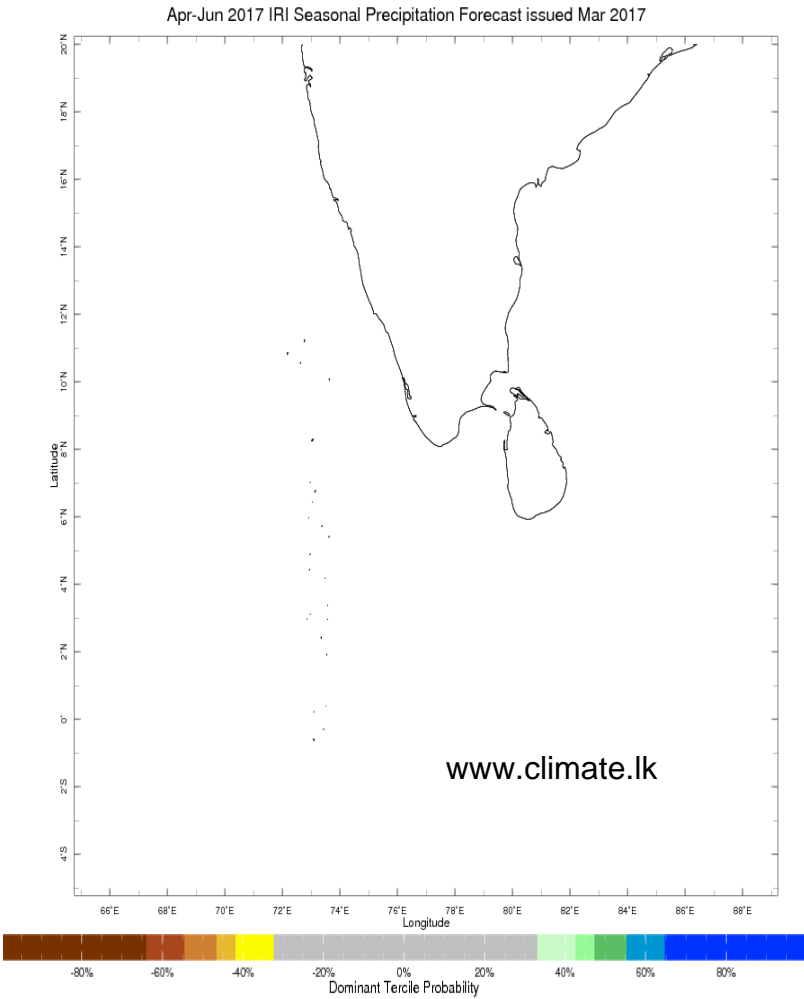
Weekly Rainfall Forecast from IRI

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.

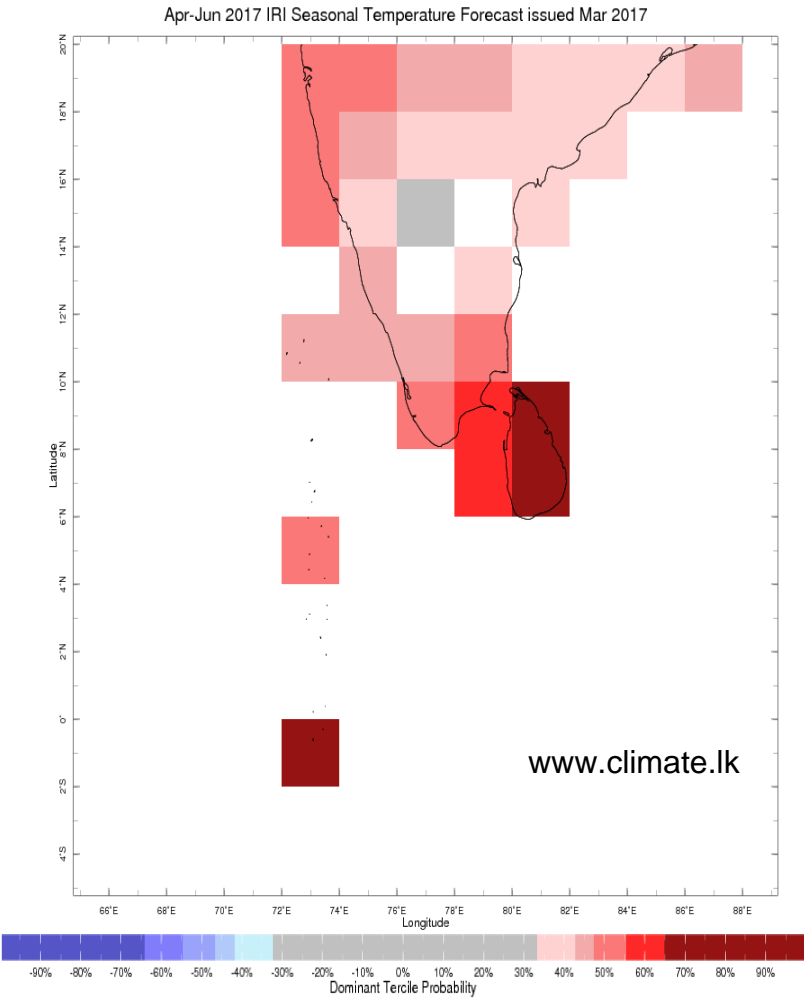


Seasonal Rainfall and Temperature Forecast

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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