

**Experimental Climate Monitoring and Prediction**

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**29 June 2017****Highlights**

- The WRF model predicts up to 36 mm of rainfall in Puttalam, Kurunegala, Gampaha and Kegalla district on the 30<sup>th</sup> of June.
- Between 21-27 Jun: Rainfall up to 50 mm was recorded in Kegalla district on the 27<sup>th</sup>.
- From 18-24 Jun: minimum temperature of 15 °C was recorded from Nuwara Eliya district while northern and eastern coastal regions of the island recorded a maximum temperature between 30-35 °C.
- From 20-26 Jun: up to 54 km/h, northwesterly winds were experienced by the whole island.
- 0.5 °C above average sea surface temperature was observed in the seas around Sri Lanka.

**Monitoring****Rainfall**

**Weekly Monitoring:** No significant rainfalls were recorded in any part of the island during June 21<sup>st</sup>-23<sup>rd</sup>. On June 24<sup>th</sup>, Mawathagama region in Kurunegala district received up to 20 mm of rainfall. On the 25<sup>th</sup> Kurunegala, Kegalla, Gampaha, Galle and Matara districts received up to 20 mm of rainfall; and most southern and central parts of the island up to 10 mm. On the 26<sup>th</sup> Puttalam district received up to 30 mm of rainfall; and Kurunegala, Gampaha, Colombo, Ratnapura, Kalutara and Galle districts up to 20 mm. On the 27<sup>th</sup> Kegalla district received up to 50 mm of rainfall; Puttalam, Matale, Kandy, Kurunegala, Gampaha, Colombo and Ratnapura districts up to 30 mm; and Anuradhapura, Polonnaruwa, Ampara, Badulla, Monaragala, Nuwara Eliya and Kalutara districts up to 20 mm.

**Total Rainfall for the Past Week:** The RFE 2.0 tool shows total rainfall of 50-75 mm in Kurunegala and Kegalla districts; up to 25-50 mm in Puttalam, Gampaha, Colombo, Kalutara, Ratnapura, Matale, Kandy and Nuwara Eliya districts. It shows above average rainfall up to 50 mm Kurunegala and Kegalla districts; up to 10-25 mm in Anuradhapura, Puttalam, Matale and Gampaha districts; and below average rainfall up to 10-25 mm in Ampara, Monaragala, Hambantota, Matara and Galle districts.

**Monthly Monitoring:** During May - above average rainfall conditions were experienced in the entire island except for Batticaloa, Ampara and Jaffna districts. Ratnapura district received up to 450 mm above average rainfall; and Kegalla, Kalutara, Matara and Galle districts received up to 360 mm; Nuwara Eliya district up to 240 mm and many parts of the island up to 120 mm. Monthly total rainfall for Ratnapura, Kalutara and Galle districts amounted to 540 mm; up to 420 mm for Kegalla district; and 360 mm for Nuwara Eliya, Colombo and Gampaha districts. The CPC Unified Precipitation Analysis tool shows ~1000 mm of total rainfall in Ratnapura district; up to ~750 mm in Kegalla, Colombo, Kalutara and Galle districts; and up to ~500 mm Kurunegala, Gampaha, Nuwara Eliya and Matara districts; up to 300 mm in Puttalam, Kandy, Badulla, Monaragala and Hambantota districts; and up to 200 mm in Anuradhapura, Polonnaruwa and Matale districts.

**Ocean State** (Text Courtesy IRI)**Pacific sea state: June 15, 2017**

In mid-June 2017, the tropical Pacific remained in an ENSO-neutral state, with SSTs not far from 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, with chances for El Niño development rising to about 40-45% during fall and early winter.

## **Indian Ocean State**

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

## **Predictions**

### **Rainfall**

#### **14-day prediction:**

##### **NOAA NCEP models:**

From 28th Jun– 4th Jul: Total rainfall between 55-65 mm in Kegalla, Colombo, Kalutara, Ratnapura and Galle districts; between 45-55 mm in Gampaha, Kandy, Nuwara Eliya and Matara districts; between 15-25 mm in Puttalam, Kurunegala, Matale, Badulla, Monaragala and Hambantota districts.

From 5th – 11th Jul: Total rainfall between 55-65 mm in Kegalla, Colombo, Kalutara, Ratnapura and Galle districts; between 45-55 mm in Gampaha, Kandy, Nuwara Eliya and Matara districts; between 15-25 mm in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Puttalam, Kurunegala, Matale, Polonnaruwa, Badulla, Ampara, Monaragala and Hambantota districts.

##### **IMD WRF & IRI Model Forecast:**

29th Jun: Up to 3 mm of rainfall in Puttalam, Gampaha, Kegalla and Colombo districts.

30th Jun: Up to 36 mm of rainfall in Puttalam, Kurunegala, Gampaha and Kegalla district; up to 8 mm of rainfall in Anuradhapura, Colombo, Kalutara, Ratnapura, Galle districts.

##### **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.

<sup>1</sup> 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/>

### **FECT WEBSITES**

<http://www.climate.lk> and <http://www.tropicalclimate.org/>



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## Weekly Hydro- Meteorological Report for Sri Lanka

### Inside This Issue

#### 1. Monitoring

- a. Daily Rainfall Monitoring
- b. Monthly Rainfall Monitoring
- c. Dekadal (10 Day) Satellite Derived Rainfall Estimates
- d. Weekly Average SST Anomalies

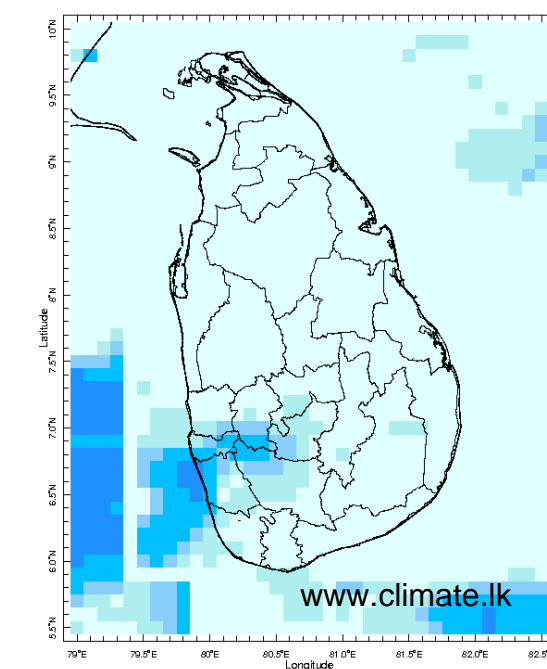
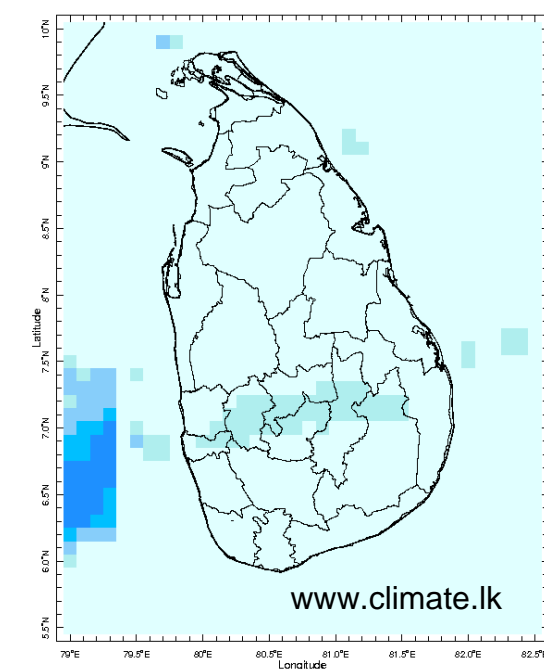
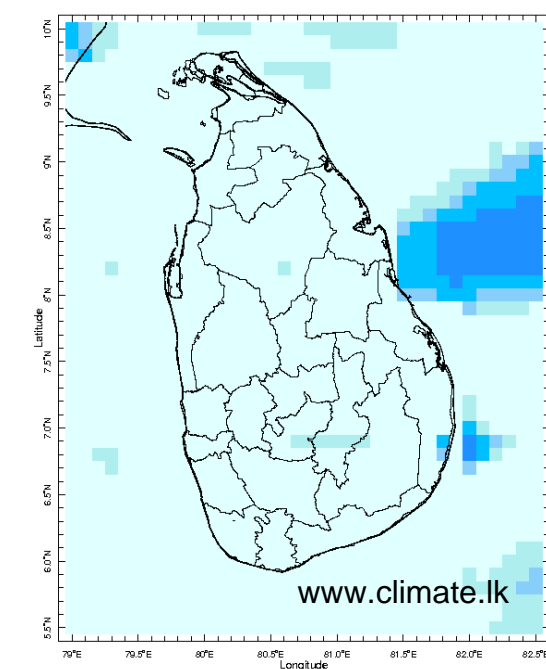
#### 2. Predictions

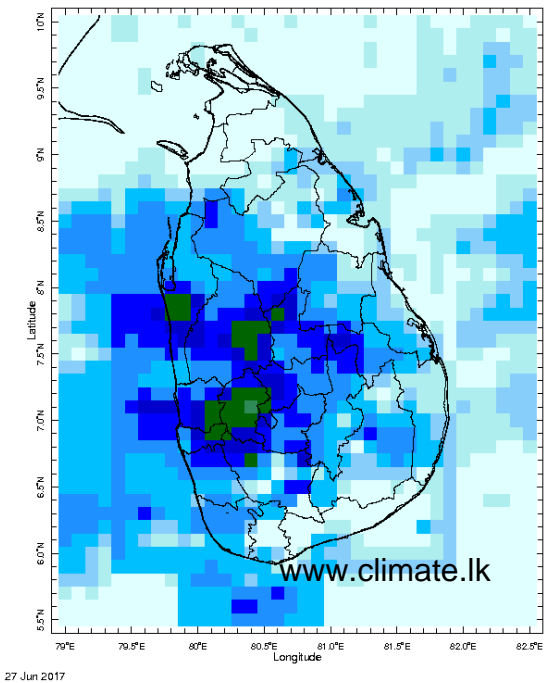
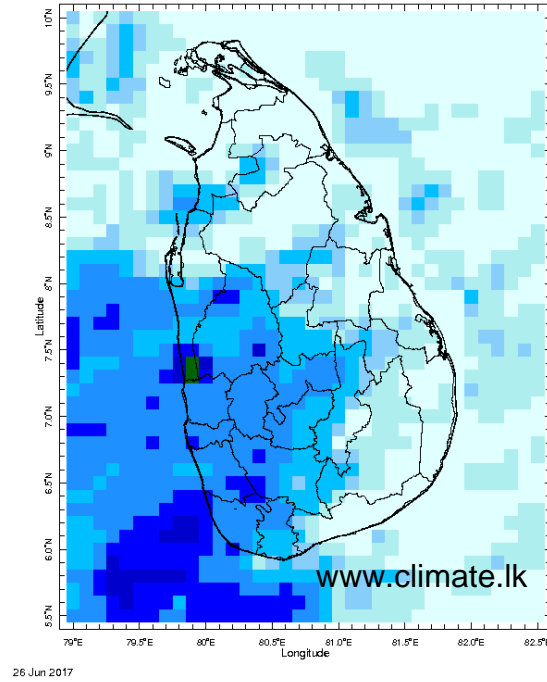
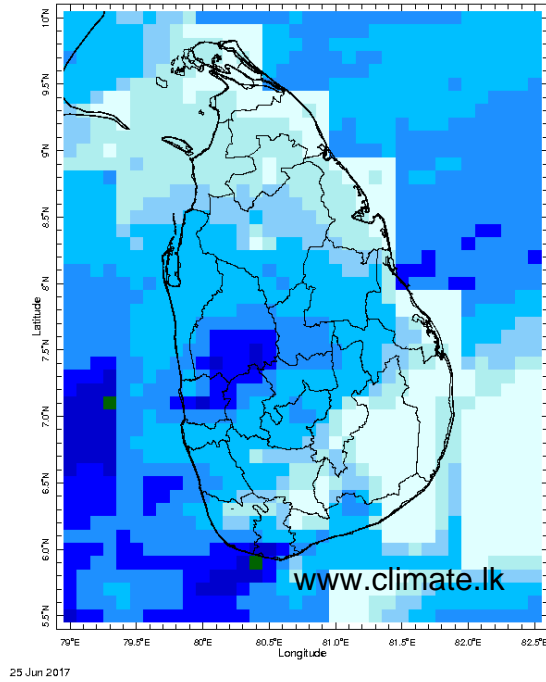
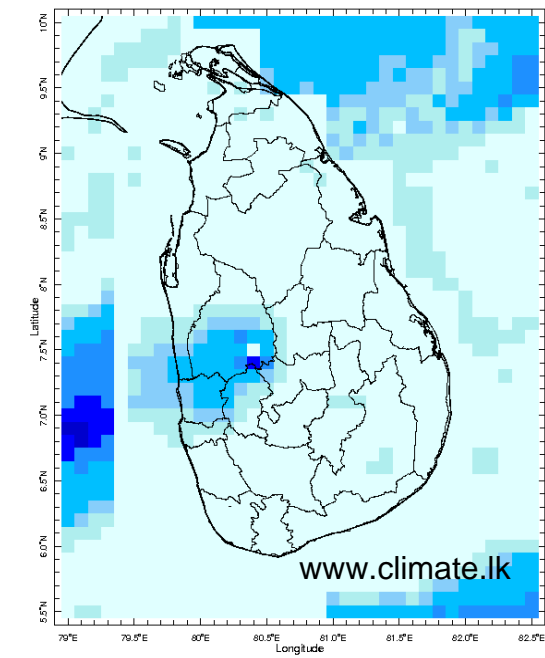
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

### MONITORING

#### Daily Rainfall Monitoring

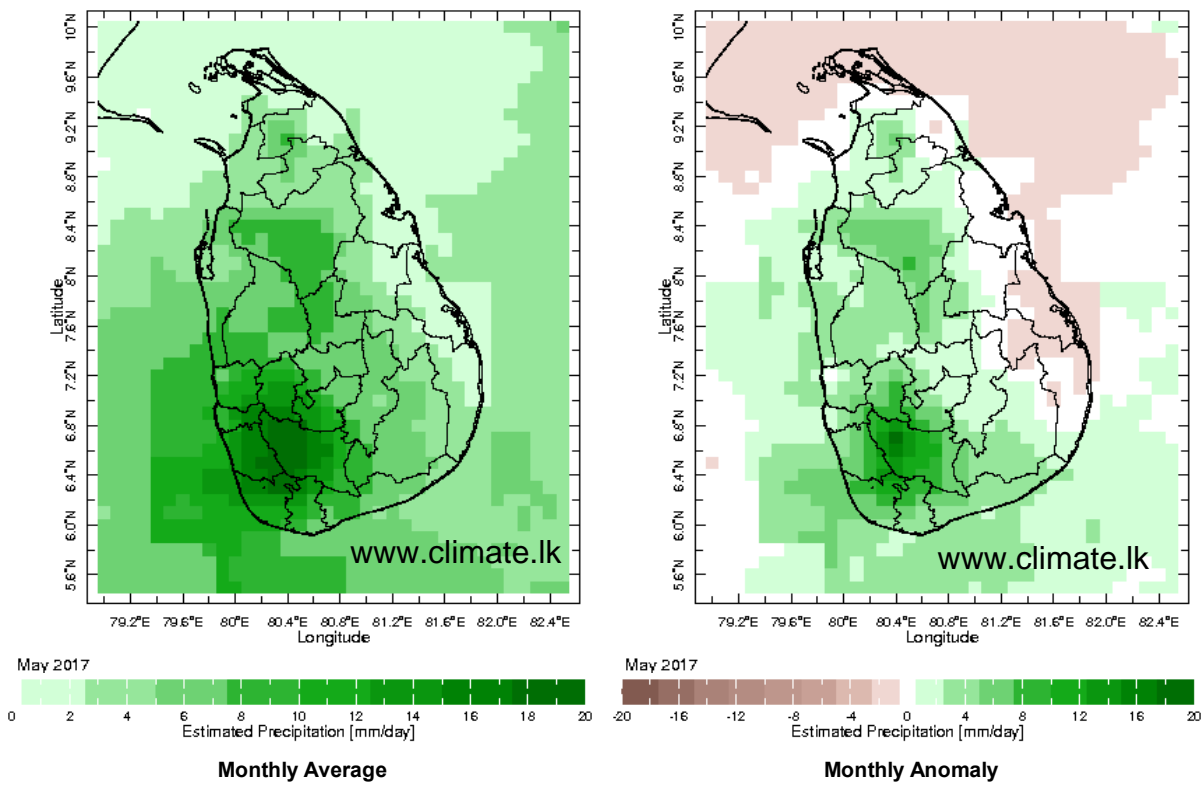
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



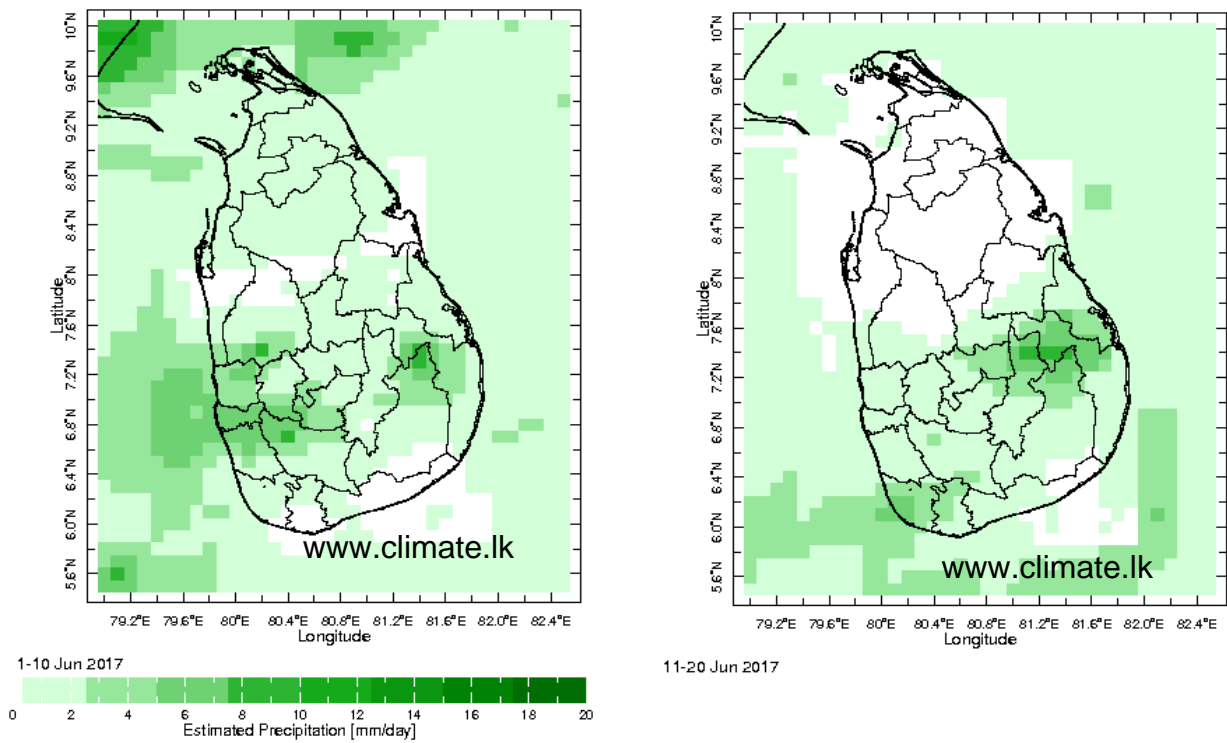


Monthly Rainfall Monitoring

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

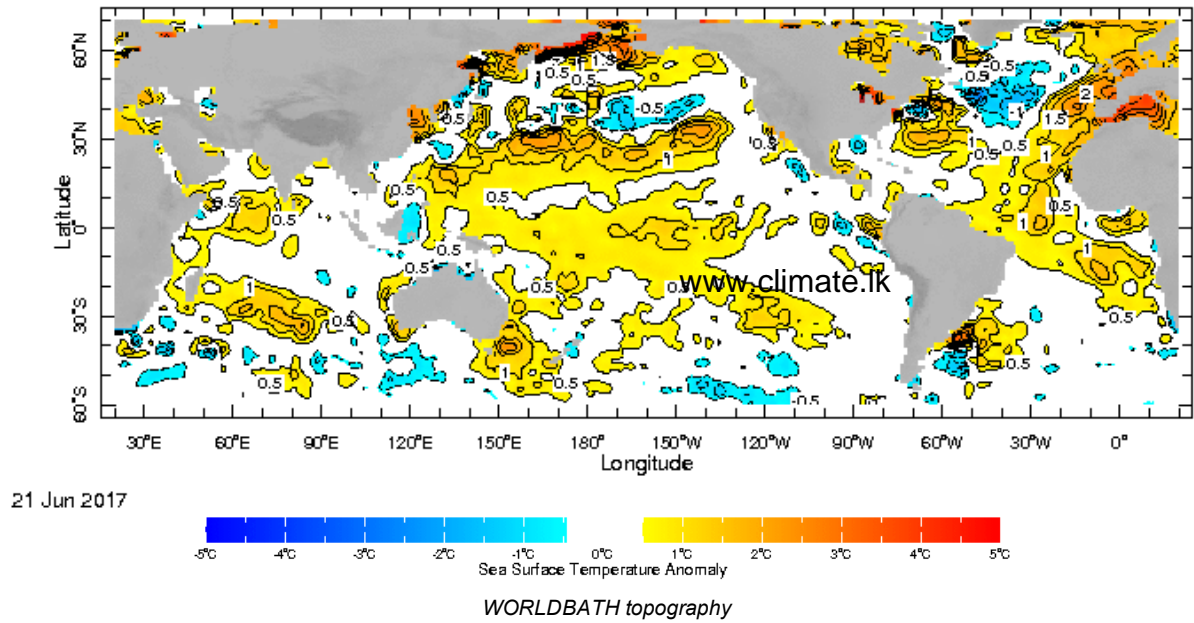


**Dekadal (10 Day) Satellite Derived Rainfall Estimates**

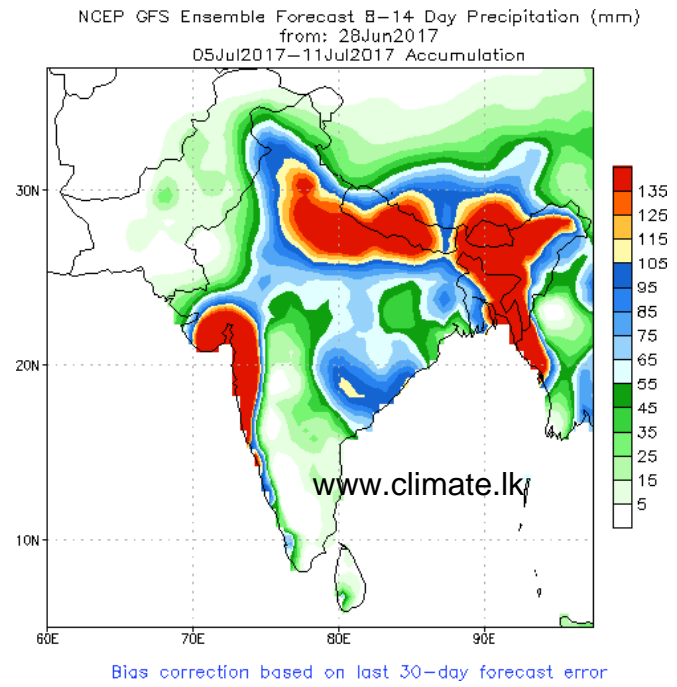
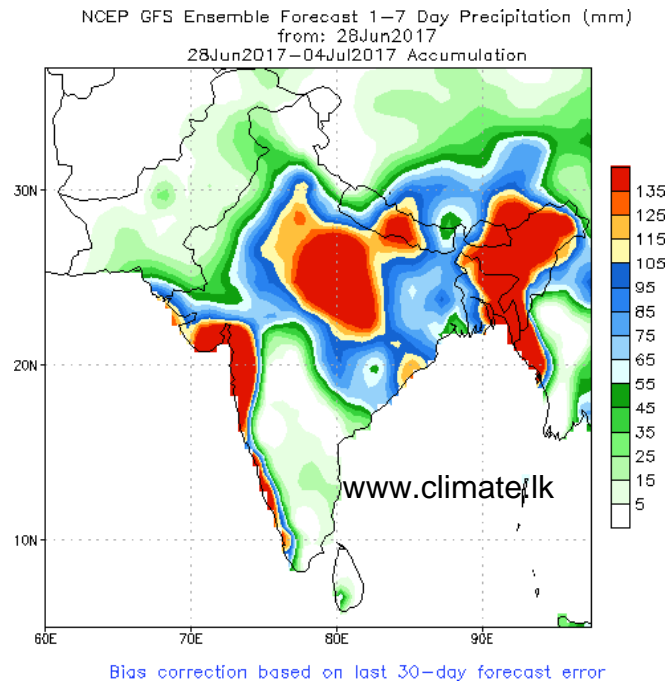


**Weekly Average SST Anomalies**

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

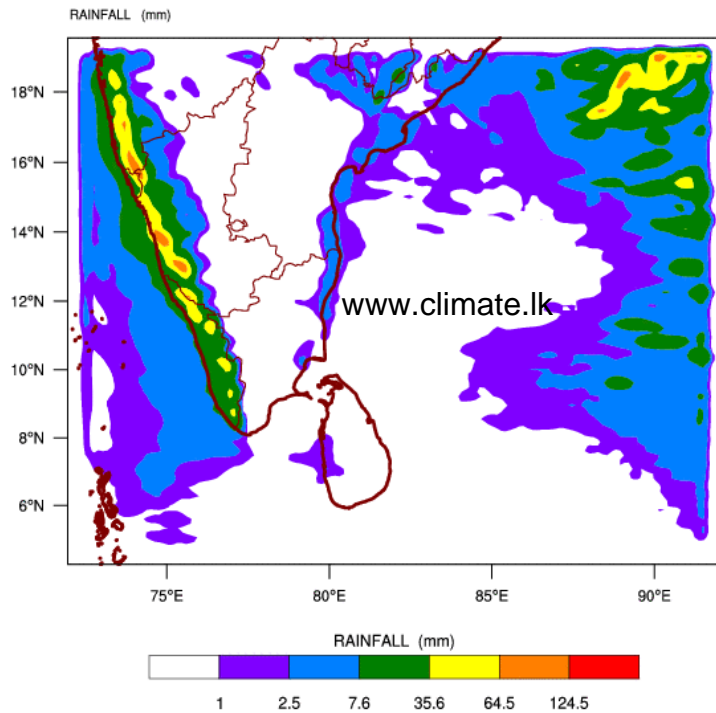


## NCEP GFS 1- 14 Day prediction

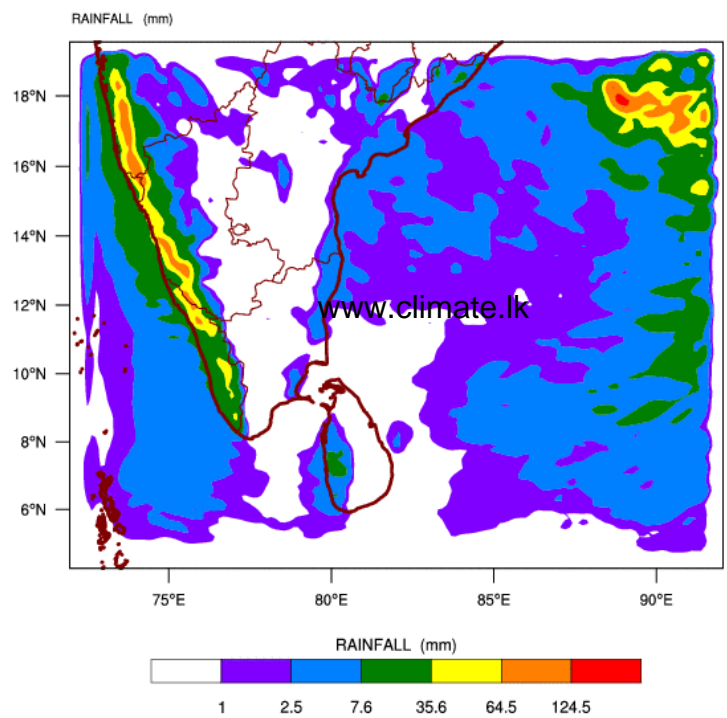


## WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 27-06-2017 valid for 03 UTC of 29-06-2017

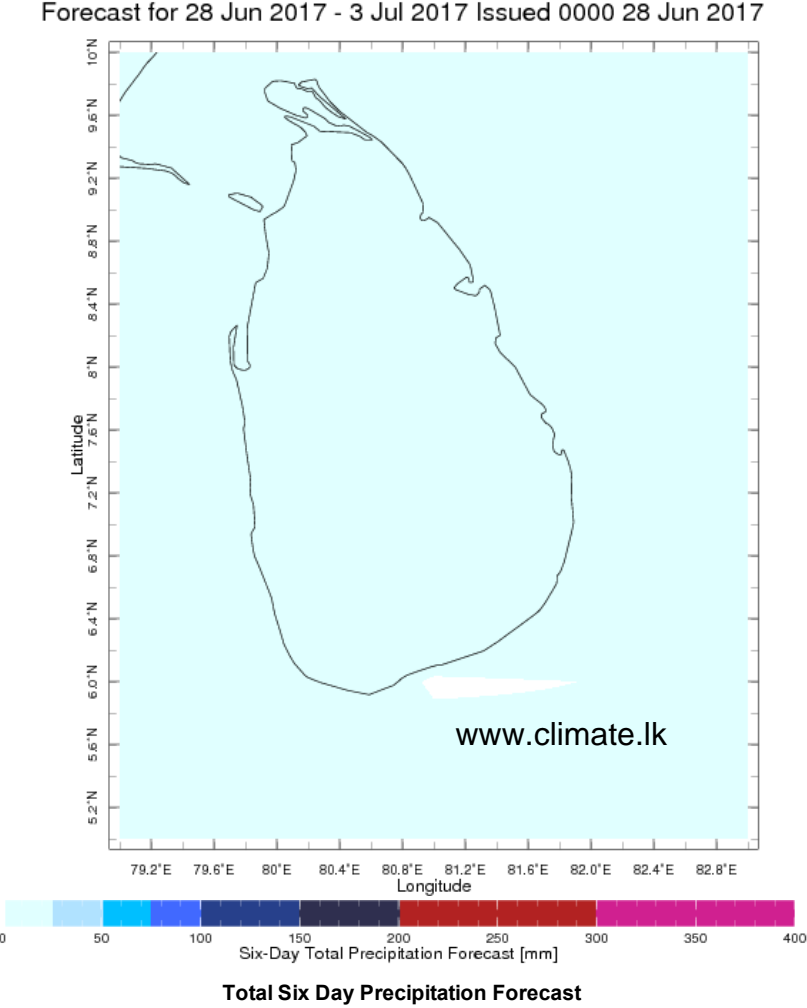
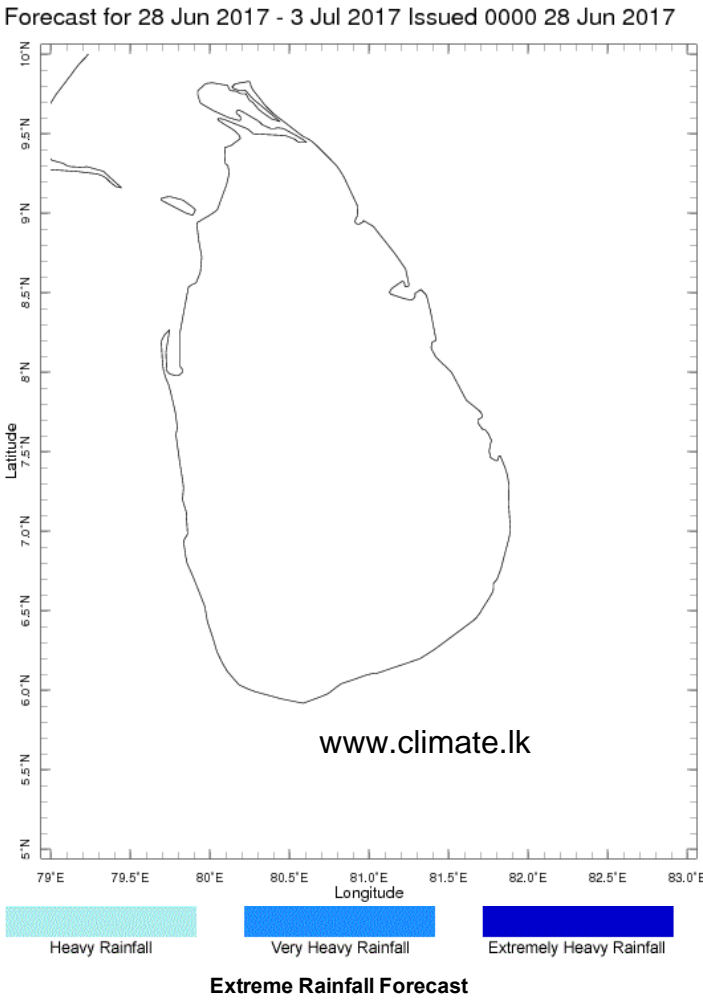


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 27-06-2017 valid for 03 UTC of 30-06-2017



Weekly Rainfall Forecast from IRI

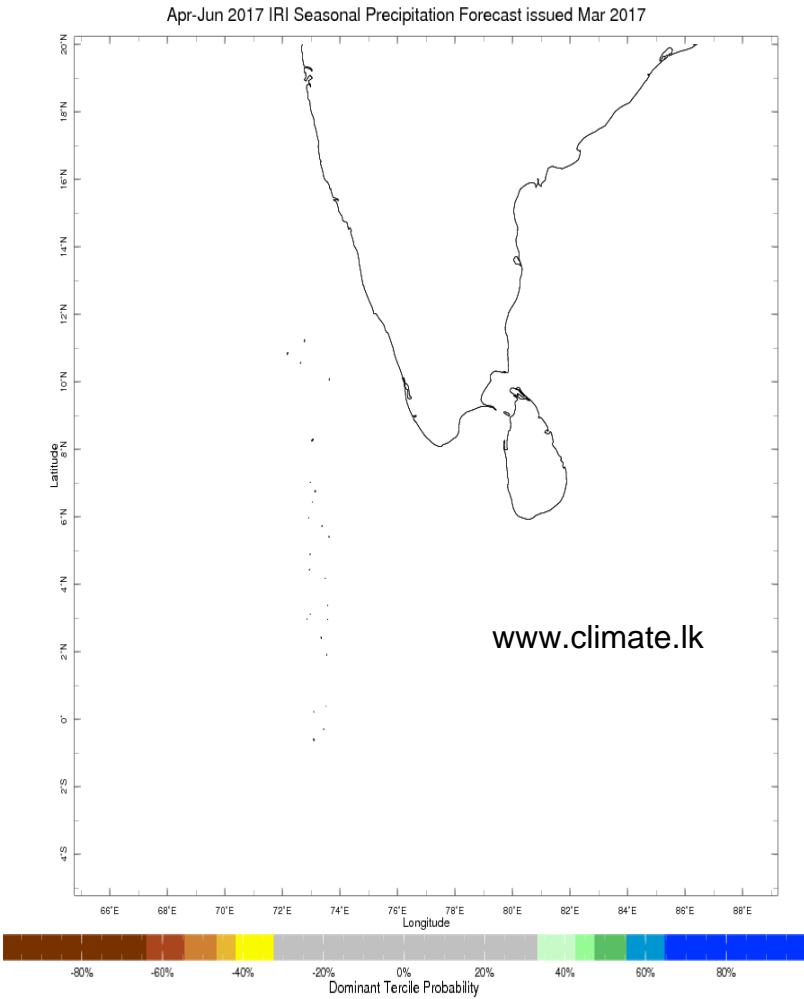
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.



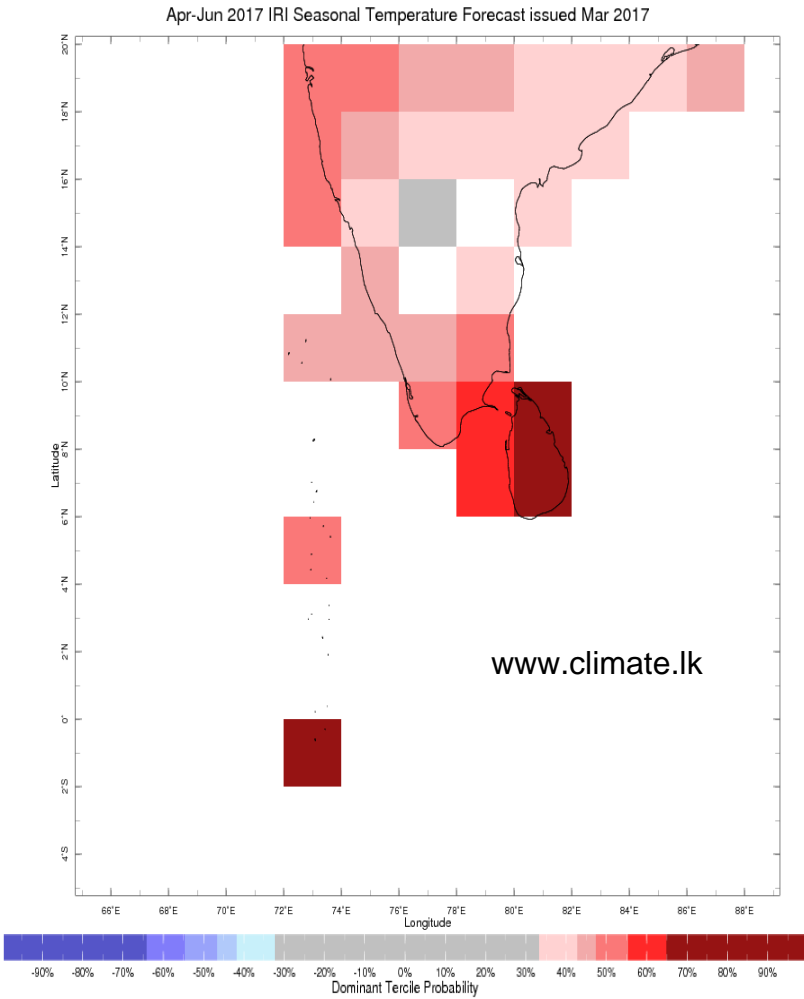


Seasonal Rainfall and Temperature Forecast

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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