

## Experimental Climate Monitoring and Prediction

by: Ruchira Lokuhetti, Himash Rashmika, Janan Visvanathan,  
Lareef Zubair and Michael Bell<sup>1</sup> (FECT and IRI<sup>1</sup>)

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### Highlights

- The IRI weekly rainfall forecast predicts extremely heavy rainfall in the southern coastal regions during 6-11 Sep.
- Between 30 Aug - 4 Sep: Rainfall up to 50 mm was recorded in Kurunegala district on the 2<sup>nd</sup>.
- From 27 Aug - 2 Sep: minimum temperature of 20 °C was recorded from Nuwara Eliya district while eastern coastal regions of the island recorded a maximum temperature between 30-35 °C.
- From 29 Aug - 4 Sep: up to 20 km/h, northwesterly winds were experienced by the southern regions of the country; and up to 18 km/h in the central and northern regions.
- Average sea surface temperature was observed in the seas around Sri Lanka.

### Monitoring

#### Rainfall

**Weekly Monitoring:** On August 30<sup>th</sup>, Jaffna district received up to 20 mm of rainfall; and Kilinochchi, Mannar, Mullaitivu, Vavuniya, Ampara, Badulla and Monaragala districts up to 10 mm. On the 31<sup>st</sup> Mullaitivu, Vavuniya, Puttalam, Anuradhapura and Kurunegala districts received up to 40 mm of rainfall; Mannar, Polonnaruwa, Matale and Ratnapura districts up to 30 mm; Kilinochchi, Trincomalee, Badulla and Galle districts up to 20 mm; and many parts of the island up to 10 mm. On September 1<sup>st</sup> Kalutara, Ratnapura, Galle and Matara districts received up to 30 mm of rainfall; and Mannar, Vavuniya and Hambantota districts up to 20 mm. On the 2<sup>nd</sup> Kurunegala district received up to 50 mm of rainfall; Puttalam, and Kegalla districts up to 30 mm; Anuradhapura, Polonnaruwa, Batticaloa, Matale, Ampara, Kandy, and Gampaha districts up to 20 mm; and many parts of the island up to 10 mm. On the 3<sup>rd</sup> Kalutara, Ratnapura, Galle, Matara, Kegalla and Ampara districts received up to 10 mm of rainfall. On the 4<sup>th</sup> Vavuniya, Colombo, Kalutara, Galle, Hambantota, Kandy, Nuwara Eliya and Badulla districts received up to 30 mm; and Gampaha, Kegalla, Matale, Ratnapura, Matara 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 Anuradhapura district; up to 50-75 mm in Vavuniya, Puttalam, Kurunegala, Matale, Nuwara Eliya, Kegalla, Gampaha, Colombo and Ratnapura districts; and 25-50 mm in many parts of the island. It shows above average rainfall up to and 50-100 mm in Puttalam, Kurunegala, Vavuniya and Anuradhapura districts; and up to 25-50 mm Mannar, Matale, Polonnaruwa, Kandy and Nuwara Eliya districts. It also shows below average rainfalls up to 10-25 mm in Matara district.

**Monthly Monitoring:** During August - below average rainfall conditions were experienced in the southern and western regions of the island and above average rainfall in northern and eastern regions. Gampaha, Colombo, Kalutara, Galle, Matara, Kegalla, Nuwara Eliya and Hambantota districts received up to 150 mm below average rainfall. Batticaloa, Ampara and Monaragala districts received up to 180 mm of above average rainfall; and Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Ampara and northern regions of Puttalam and Badulla districts up to 150 mm. The CPC Unified Precipitation Analysis tool shows ~300 mm of total rainfall in Batticaloa, Polonnaruwa, Monaragala, Badulla, Ratnapura, Anuradhapura and Ampara districts; up to ~200 mm in Trincomalee, Puttalam, Matale, Kandy, Kalutara and Galle districts; up to 100 mm in Jaffna, Kilinochchi, Mullaitivu, Kurunegala, Matara and Hambantota districts; and up to 50 mm in many parts of the island.

#### Ocean State (Text Courtesy IRI)

##### **Pacific sea state: August 18, 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 also 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 or La Niña development less than one-half that for neutral.

## **Indian Ocean State**

Average sea surface temperature was observed in the seas around Sri Lanka.

## **Predictions**

### **Rainfall**

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

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

From 6<sup>th</sup> – 12<sup>th</sup> Sep: Total rainfall between 125-135 mm in Batticaloa and Ampara districts; between 115-125 mm Polonnaruwa district; between 95-105 mm in Galle, Hambantota, Monaragala, Badulla and Trincomalee districts; 85-95 mm in Ratnapura and Nuwara Eliya districts; and 75-85 mm in Kegalla and Kandy districts.

From 13<sup>th</sup> – 19<sup>th</sup> Sep: Total rainfall between 45-55 mm in Batticaloa and Ampara districts; and between 35-45 mm in Polonnaruwa district.

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

8<sup>th</sup> Sep: Up to 64 mm of rainfall in Puttalam, Gampaha, Colombo, Kalutara and Ratnapura districts; up to 36 mm in Puttalam, Kurunegala, Colombo, Kegalla, Nuwara Eliya, Galle and Matara districts; and up to 8 mm in the rest of the island.

9<sup>th</sup> Sep: Up to 64 mm of rainfall in Puttalam, Kurunegala, Gampaha, Colombo, Kegalla and Ratnapura districts; up to 36 mm Kandy, Nuwara Eliya, Galle, Matara and Hambantota districts; and up to 8 mm in the rest of the island.

### **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

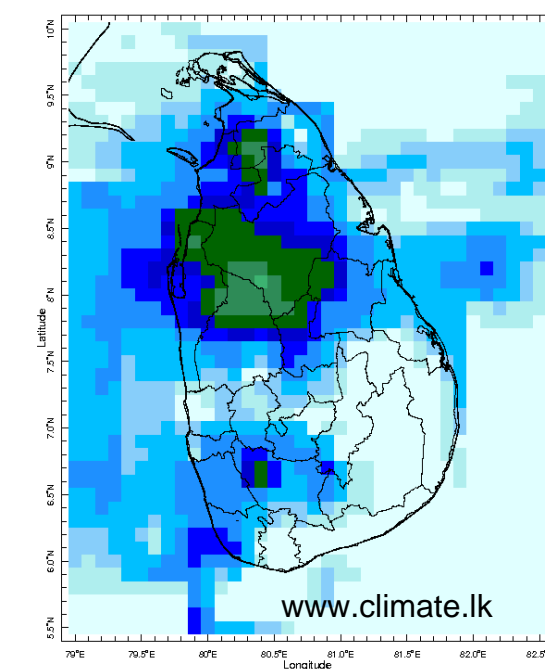
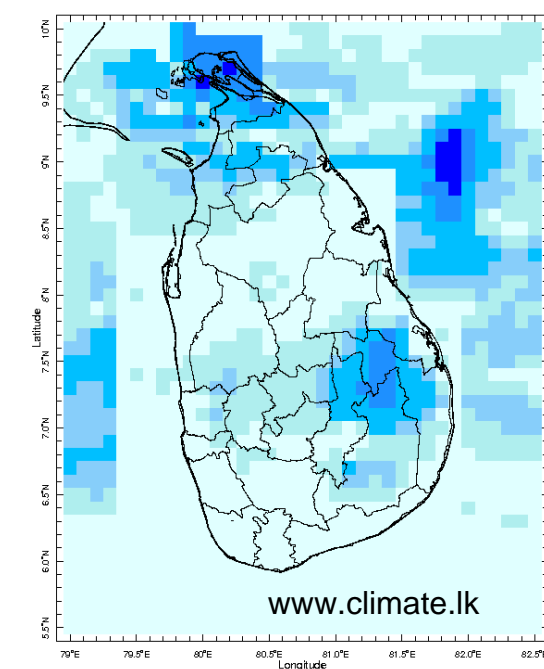
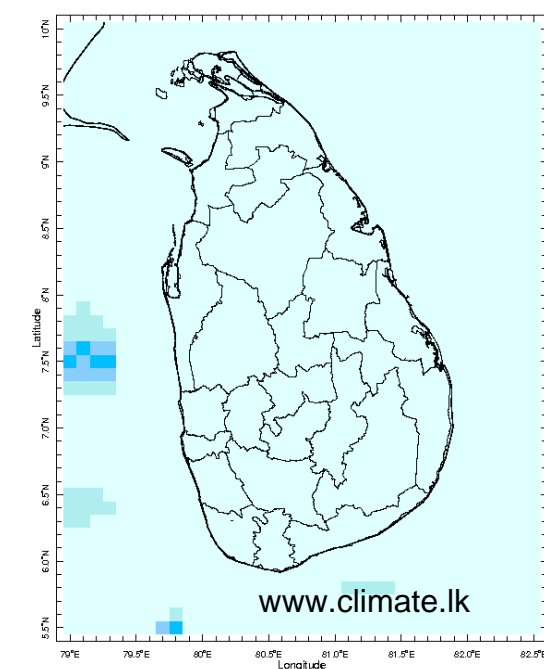
#### 2. Predictions

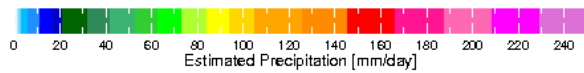
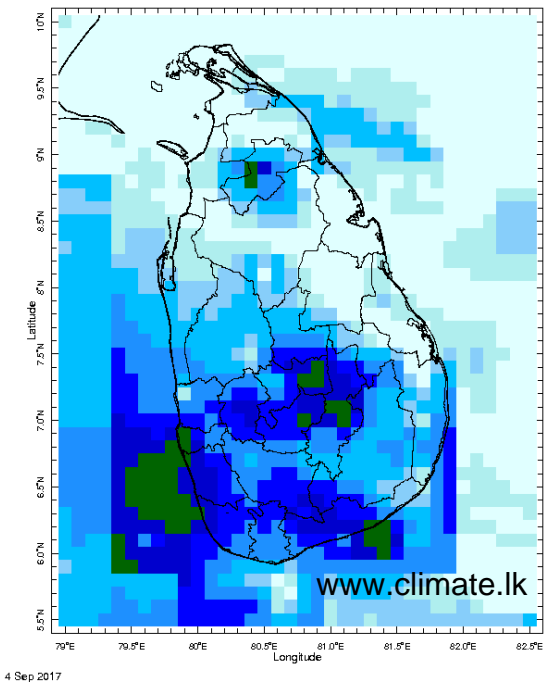
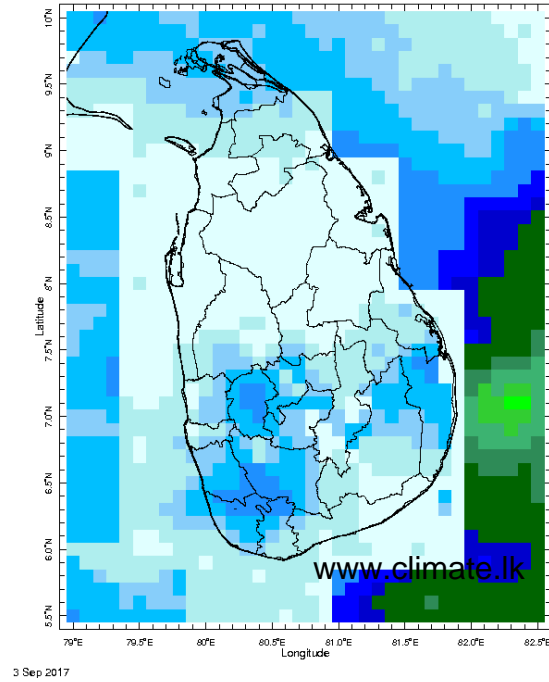
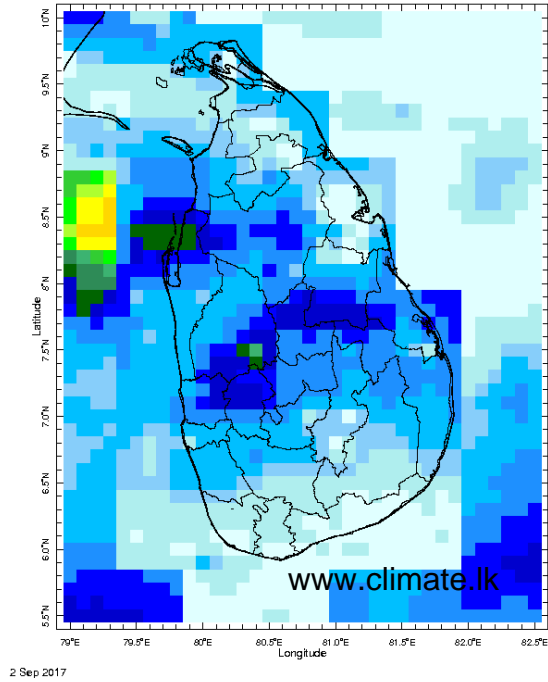
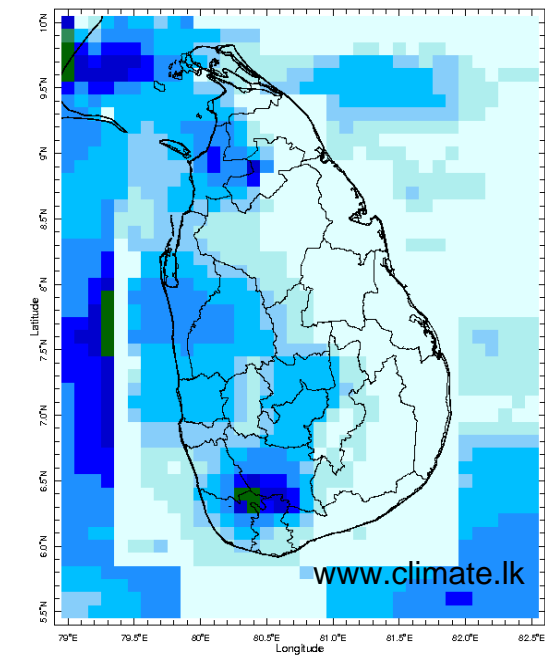
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

### MONITORING

#### Daily Rainfall Monitoring

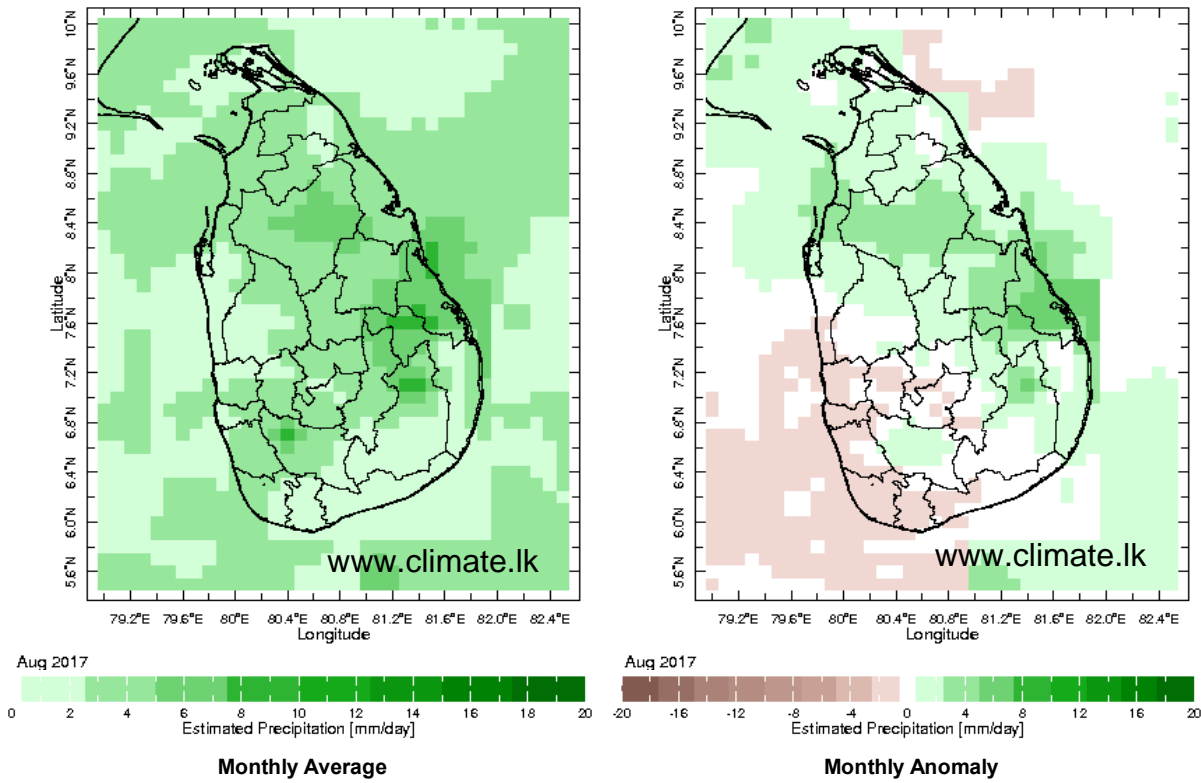
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



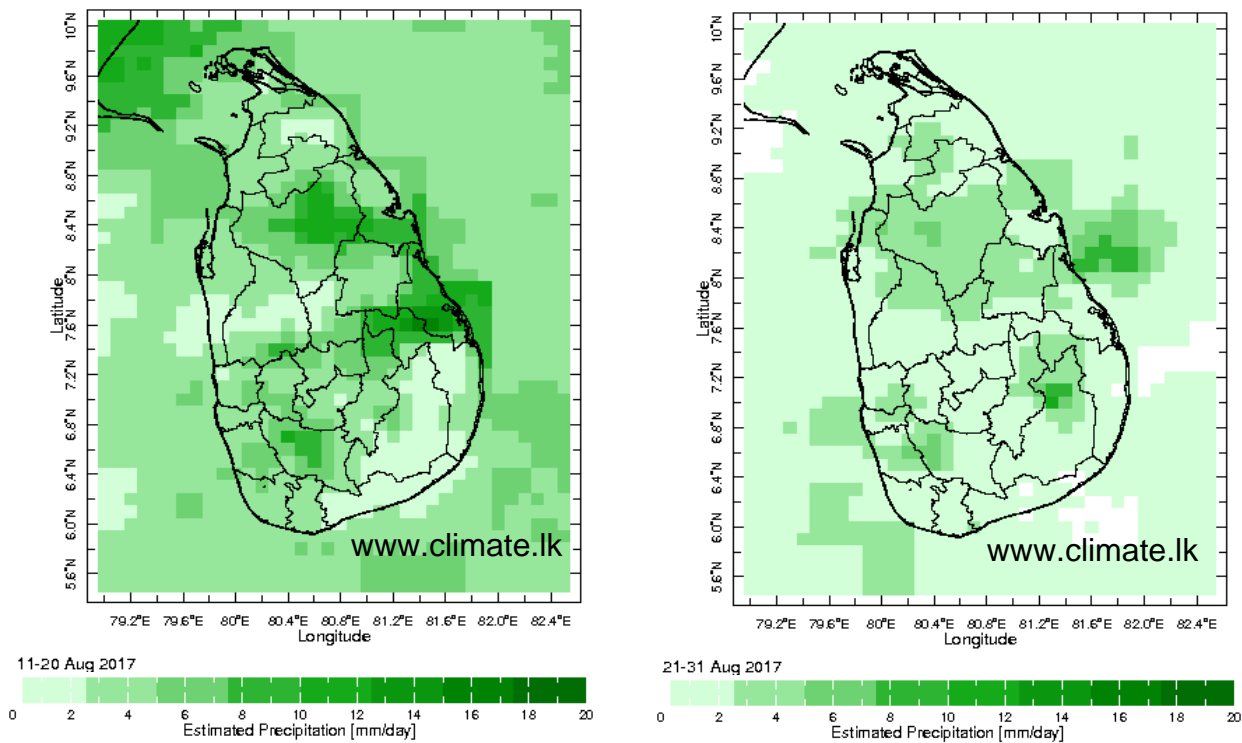


Monthly Rainfall Monitoring

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

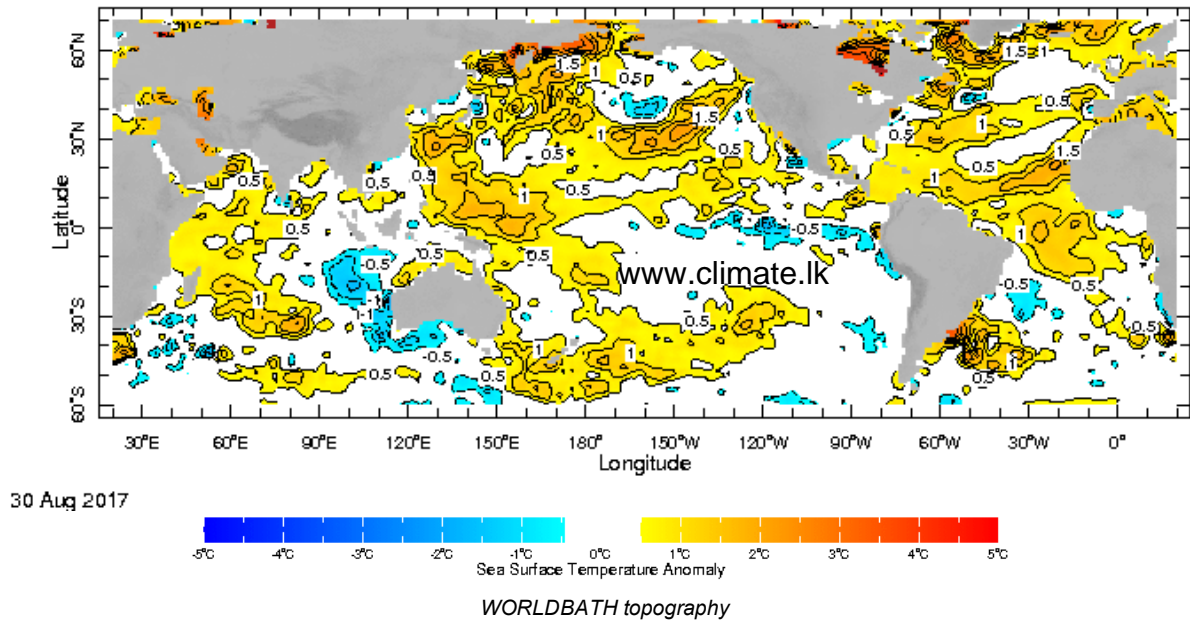


**Dekadal (10 Day) Satellite Derived Rainfall Estimates**

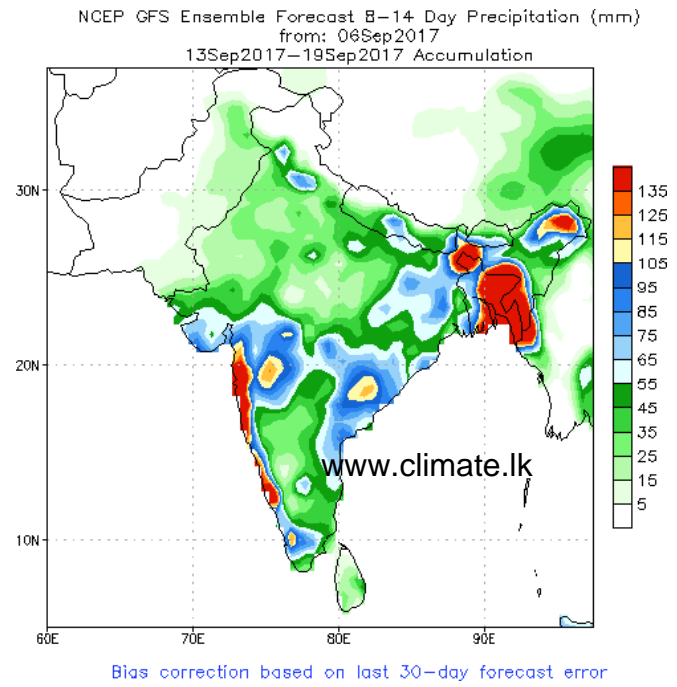
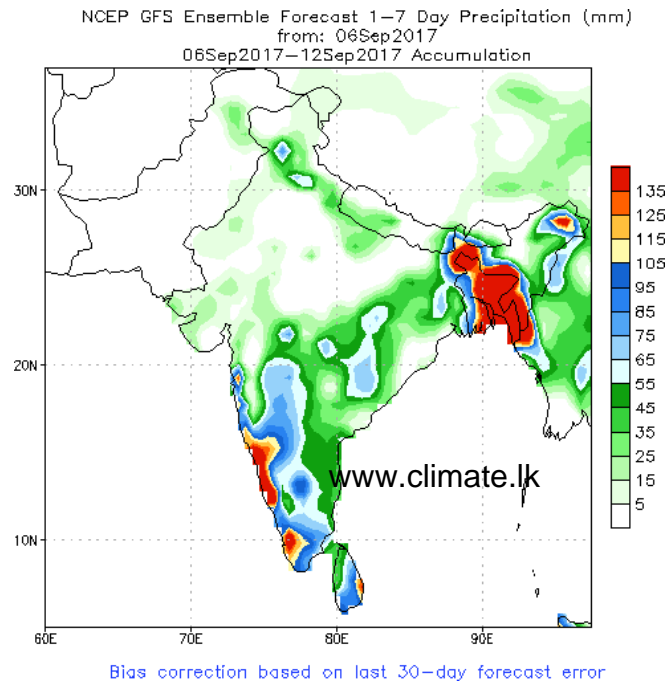


**Weekly Average SST Anomalies**

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

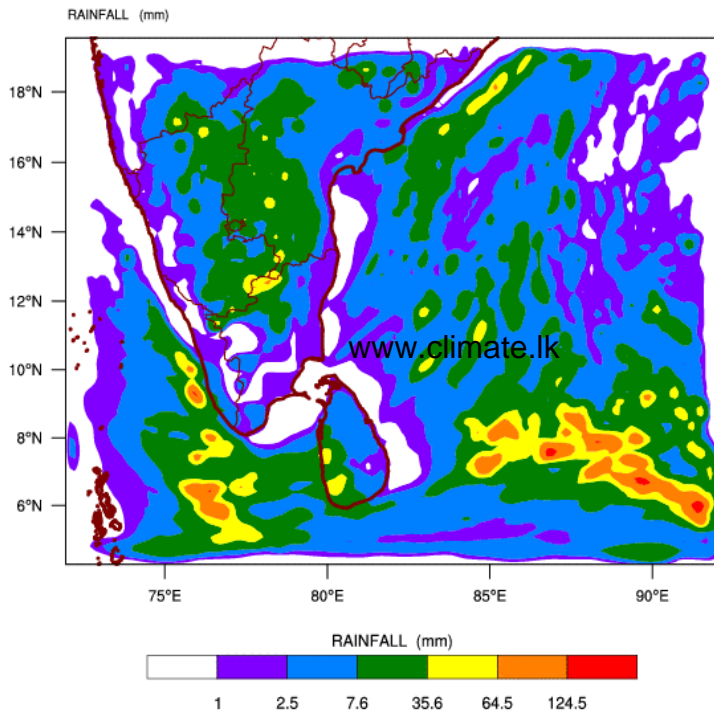


## NCEP GFS 1- 14 Day prediction

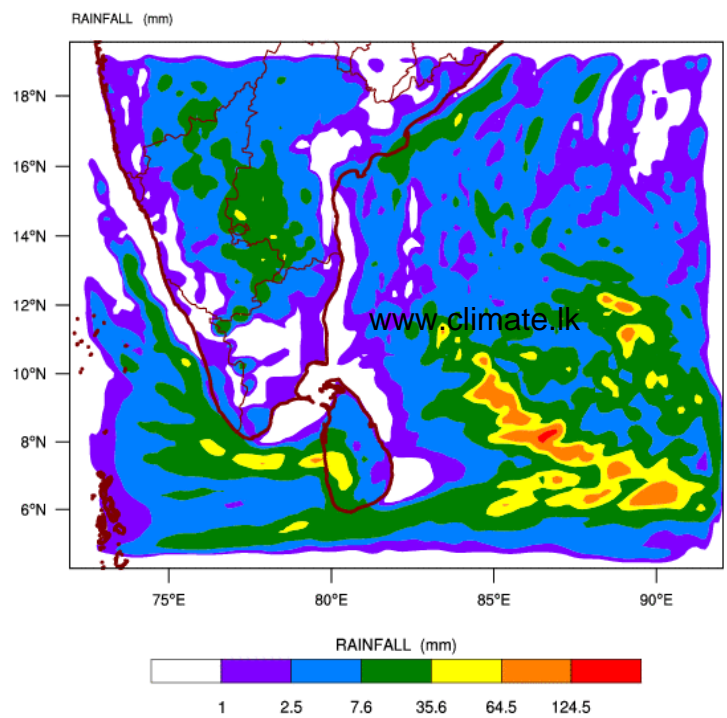


## WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-09-2017 valid for 03 UTC of 08-09-2017



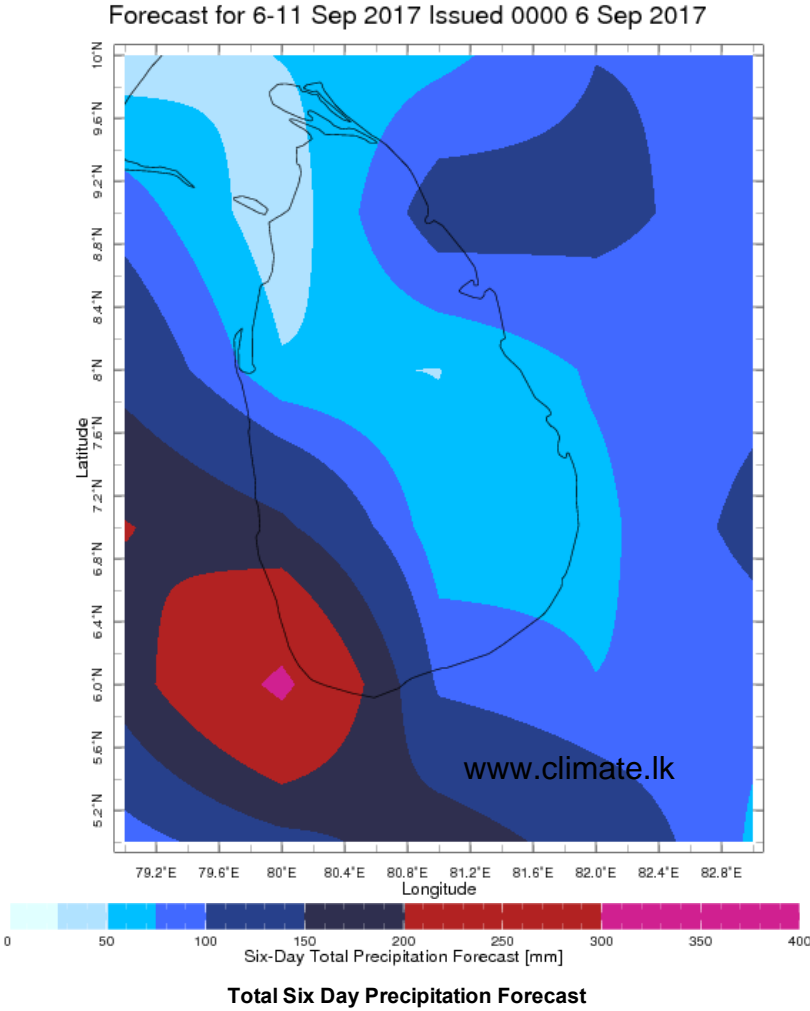
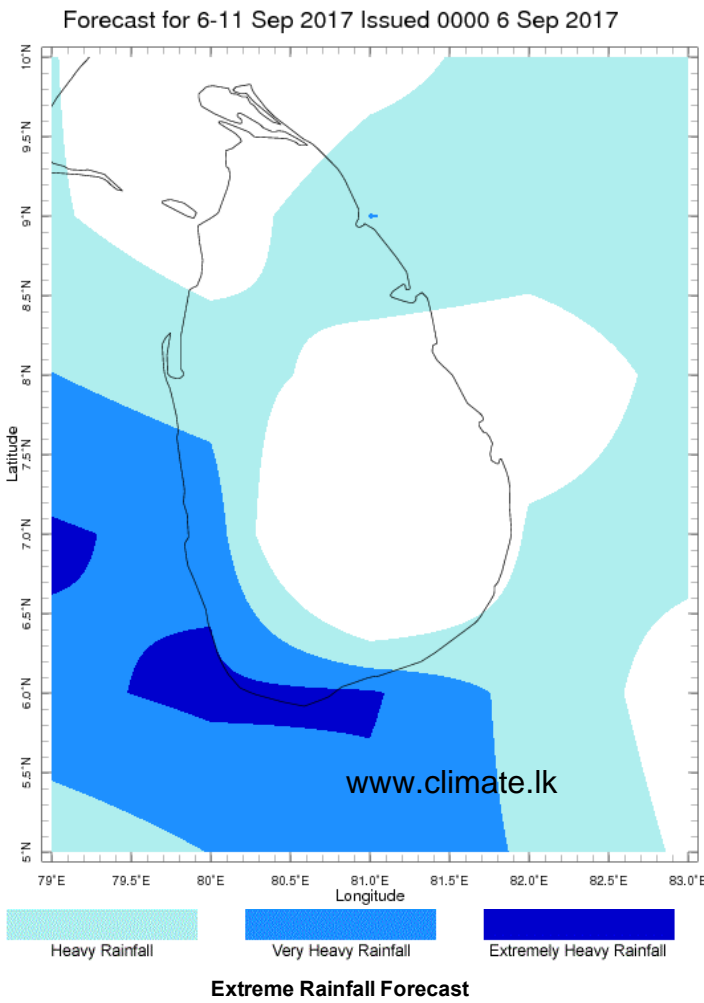
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-09-2017 valid for 03 UTC of 09-09-2017





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.



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