

## Experimental Climate Monitoring and Prediction

by: Ruchira Lokuhetti, Chalani Malge, 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 total rainfall between 200-250 mm in Mullaitivu, Vavuniya and Trincomalee districts during 22<sup>nd</sup> - 27<sup>th</sup> Nov.
- Between 15-21 Nov: Rainfall up to 80 mm was recorded in Gampaha district on November 18<sup>th</sup>.
- From 12-18 Nov: minimum temperature of 15 °C was recorded from Nuwara Eliya district while most parts of the island recorded a maximum temperature between 30-35 °C.
- From 14-20 Nov: up to 15 km/h, northeasterly winds were experienced by the entire island.
- 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 on the 15<sup>th</sup> and 16<sup>th</sup>. On November 17<sup>th</sup>, Badulla district received up to 20 mm of rainfall; and several regions of Monaragala, Matale, Kandy and Nuwara Eliya districts up to 10 mm. On the 18<sup>th</sup> Gampaha district received up to 80 mm of rainfall; southern regions of Puttalam and Kurunegala districts up to 60 mm; Colombo and Kegalla districts up to 50 mm; Ratnapura, Kegalla and western regions of Anuradhapura districts up to 30 mm; and Galle district up to 20 mm. On the 19<sup>th</sup>, Badulla and Ampara districts received up to 50 mm of rainfall; Kandy, Kegalla, Nuwara Eliya and Monaragala districts up to 30 mm; and Puttalam, Kurunegala, Gampaha, Colombo, Kalutara, Ratnapura, Matara, Hambantota, Matale, and Batticaloa districts up to 20 mm. On the 20<sup>th</sup> Puttalam, Gampaha, Colombo, Kalutara and Galle districts received up to 30 mm of rainfall; Kurunegala, Kegalla, Ratnapura, Matara and Hambantota districts up to 20 mm; and many parts of the island up to 10 mm. No significant rainfalls were recorded in any part of the island on the 21<sup>st</sup>.

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

**Monthly Monitoring:** During October - below average rainfall conditions were experienced in the northern, western and southern regions of the island and above average rainfall in central and eastern regions. Puttalam and Galle districts received up to 180 mm below average rainfall; Jaffna, Mullaitivu, Kilinochchi, Mannar, Gampaha, Kalutara, Ratnapura, Matara and Hambantota districts up to 120 mm. Polonnaruwa district received up to 240 mm of above average rainfall; Batticaloa, Trincomalee, Ampara, Badulla, Monaragala and Matale districts up to 150 mm; and Kandy, Kegalle and Nuwara Eliya districts up to 120 mm. The CPC Unified Precipitation Analysis tool shows ~360 mm of total rainfall in Polonnaruwa district; up to ~300 mm in Anuradhapura, and Batticaloa, Trincomalee, Ampara, Badulla, Kurunegala, Kegalla, Ratnapura and Matale districts.

### Ocean State (Text Courtesy IRI)

#### Pacific sea state: November 20, 2017

In mid-November 2017, the tropical Pacific reflected weak La Niña conditions, with SSTs in the east-central tropical Pacific past the threshold of La Niña and most atmosphere variables showing patterns suggestive of weak La Niña conditions. The collection of latest ENSO prediction models indicates weak La Niña as the most likely scenario for the remainder of Northern Hemisphere fall and for the winter. The official CPC/IRI outlook favors continuation of La Niña through winter, and carries a La Niña advisory.

## **Indian Ocean State**

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

## **Predictions**

### **Rainfall**

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

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

From 22<sup>nd</sup> –28<sup>th</sup> Nov: Total rainfall between 125-135 mm in Galle, Matara and Hambantota districts; More than 135 mm total rainfall rest of the island.

From 29<sup>th</sup> Nov - 05<sup>th</sup> Dec: Total rainfall more than 135 mm in Jaffna district; between 125-135 mm in Kilinochchi district; between 115-125 mm in Mullaitivu district; between 95-105 mm in Mannar and Vavuniya districts; between 85-95 mm in Anuradhapura and Trincomalee districts; between 65-76 mm in Polonnaruwa and Batticaloa districts; between 45-55 mm in Puttalam, Ampara, Badulla and Monaragala districts; Up to 45mm total rainfall rest of the island.

#### **IMD GFS Forecast:**

28<sup>th</sup> Nov: Up to 200 mm of rainfall in Nuwara Eliya, Ratnapura, Badulla, Colombo, Gampaha and Kalutara districts; Up to 130 mm in Mullaitivu, Trincomalee, Vavuniya, Anuradhapura, Polonnaruwa, Batticaloa, Ampara, Kandy, Matale, Kegalle, Galle and Matara districts; Up to 70 mm in Monaragala, Hambantota, Kilinochchi, Kurunegala and Puttalam districts.

#### **IRI Model Forecast:**

22<sup>nd</sup> – 27<sup>th</sup> Nov: Total rainfall between 200-250 mm in Mullaitivu, Vavuniya and Trincomalee districts; between 150-200 mm in Jaffna, Kilinochchi, Mannar, Anuradhapura, Polonnaruwa and Batticaloa districts; between 100-150 mm in Puttalam, Kurunegala, Matale, Kandy, Badulla, Monaragala and Ampara districts; between 75-100 mm in Gampaha, Colombo, Kalutara, Kegalle, Nuwara Eliya, Ratnapura and Hambantota districts; between 50-75 mm in Galle and Matara districts.

### **MJO based OLR predictions**

#### **For the next 15 days:**

MJO shall suppress 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

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#### 1. Monitoring

- a. Daily Rainfall Monitoring
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- d. Weekly Average SST Anomalies

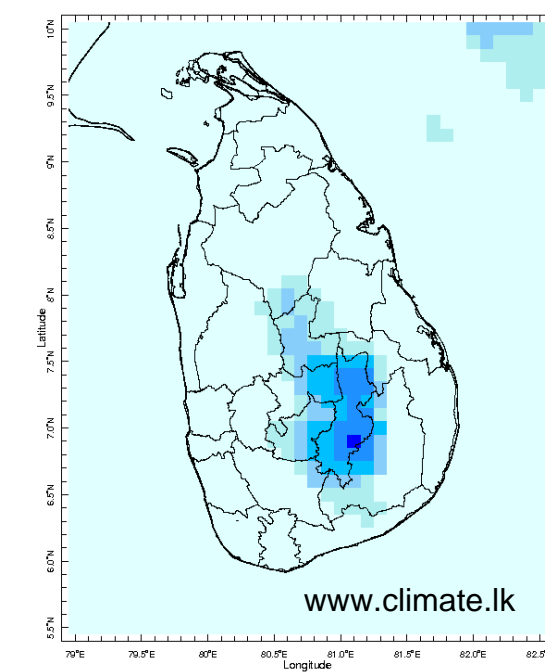
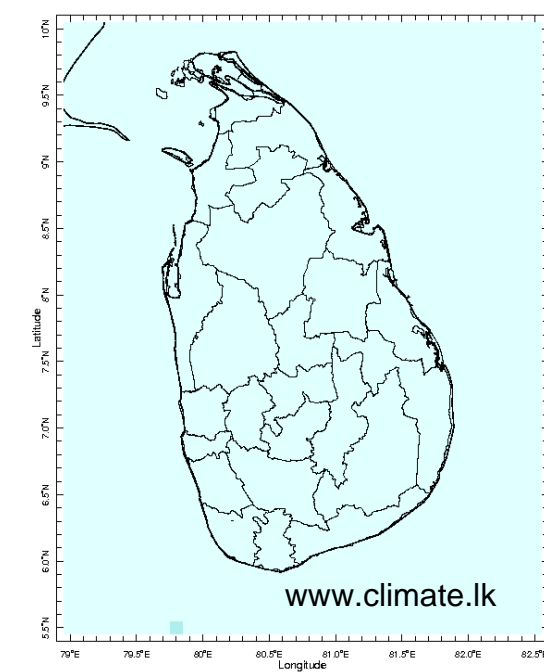
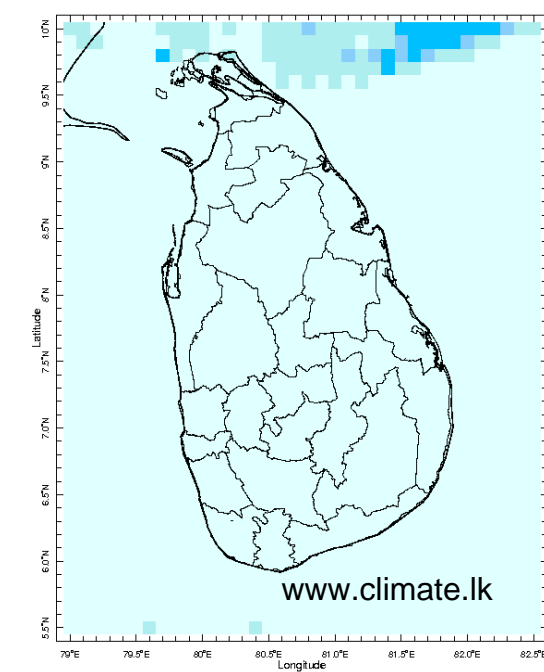
#### 2. Predictions

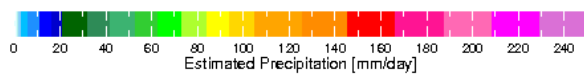
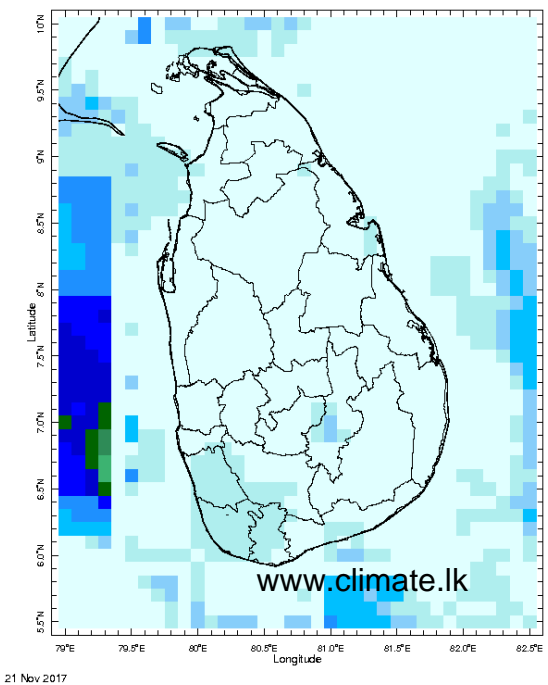
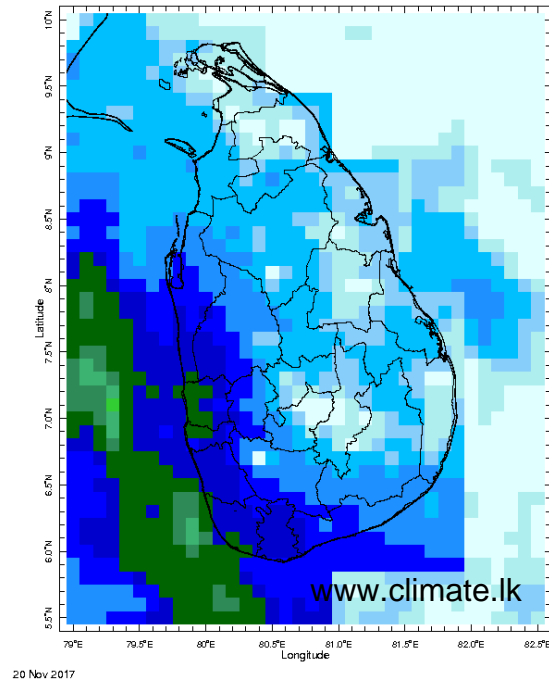
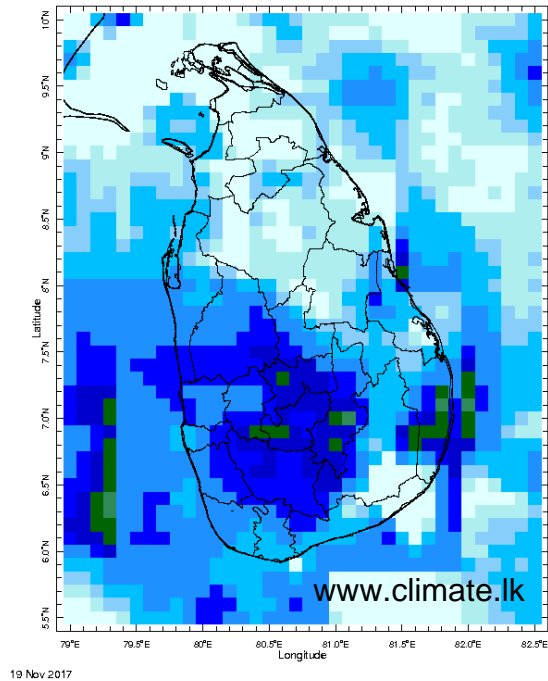
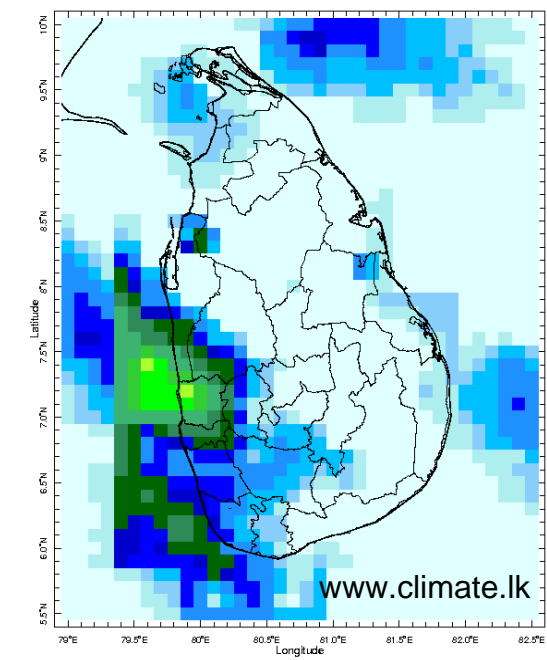
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

### MONITORING

#### Daily Rainfall Monitoring

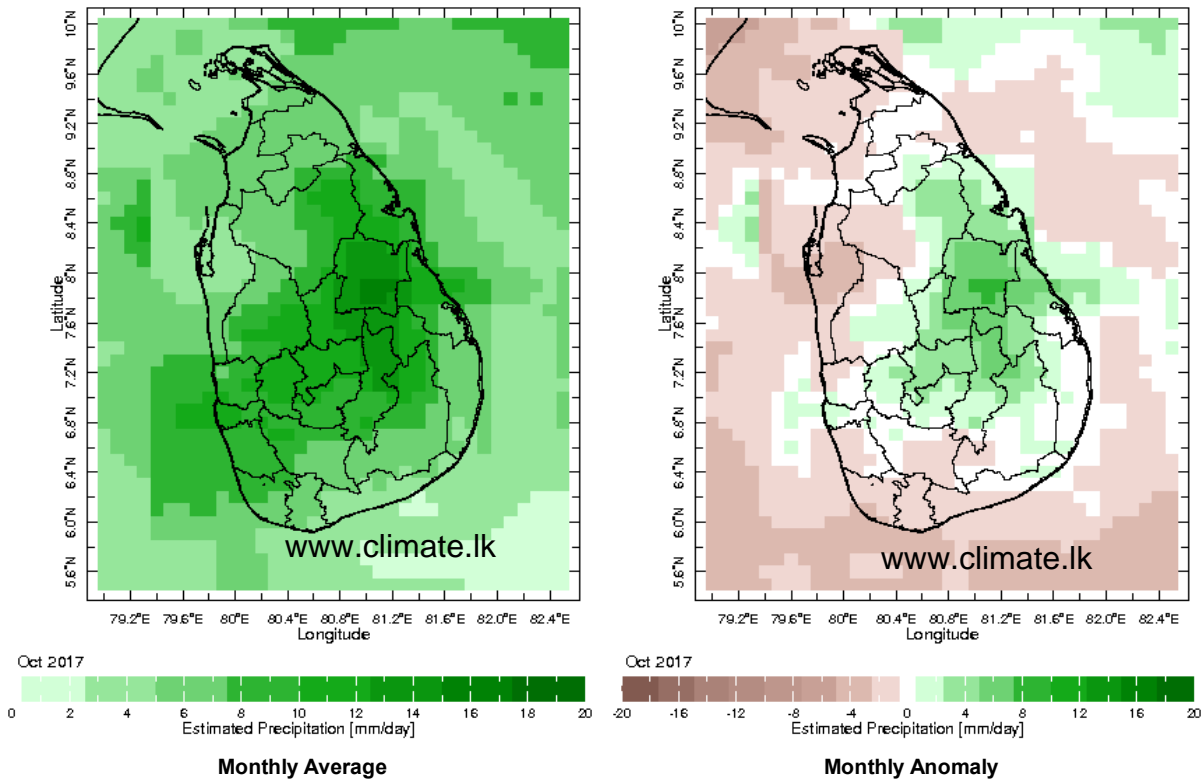
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



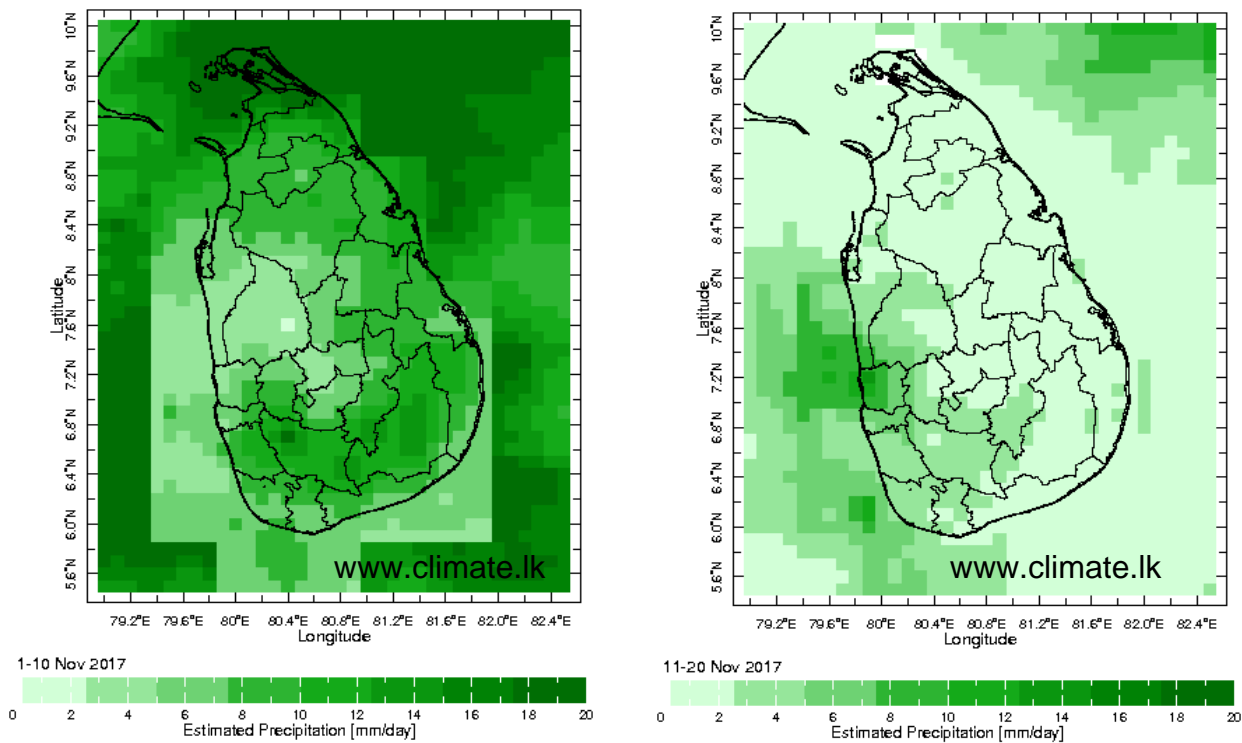


Monthly Rainfall Monitoring

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

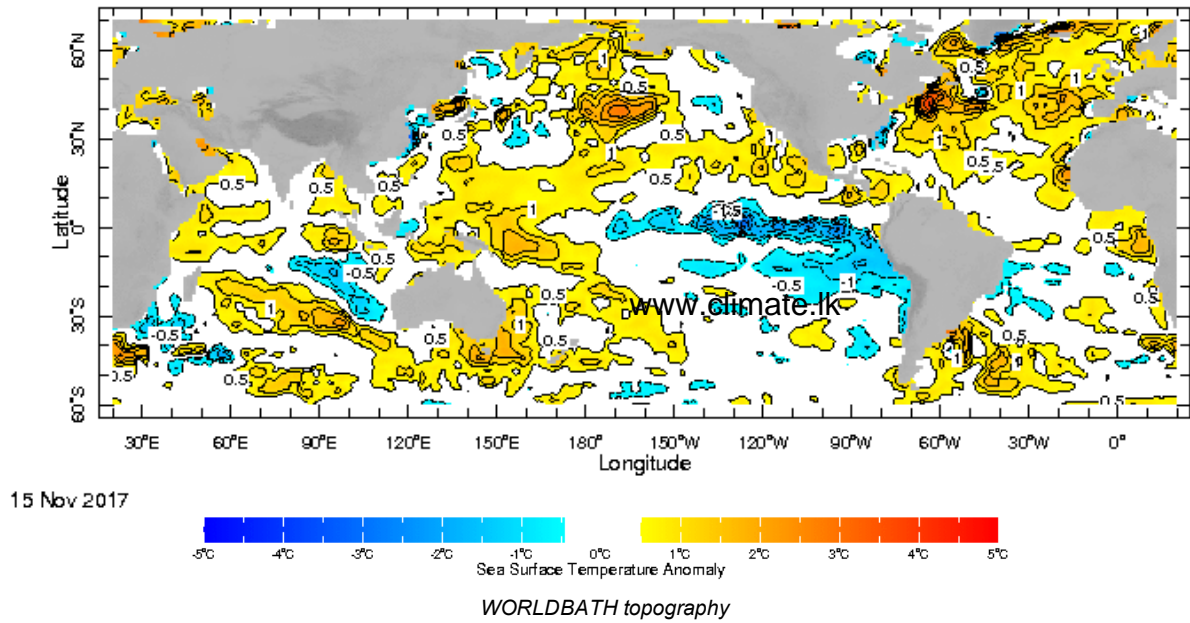


**Dekadal (10 Day) Satellite Derived Rainfall Estimates**

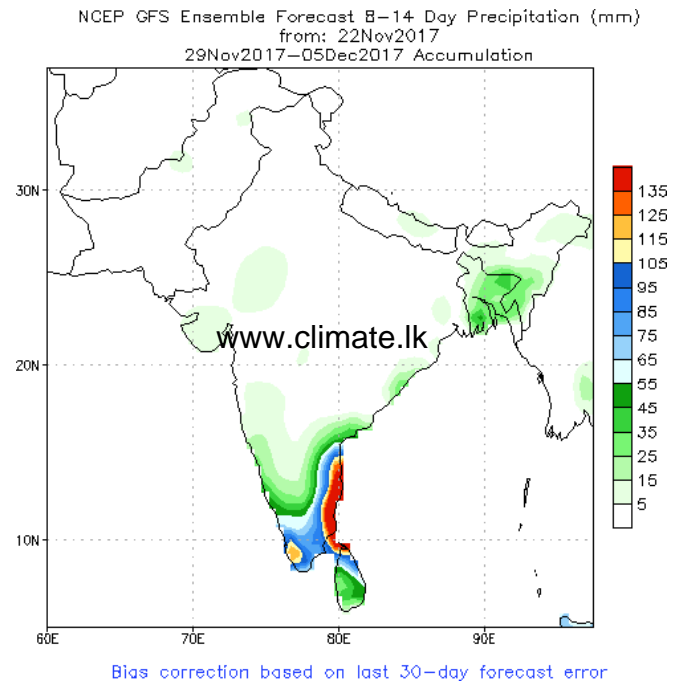
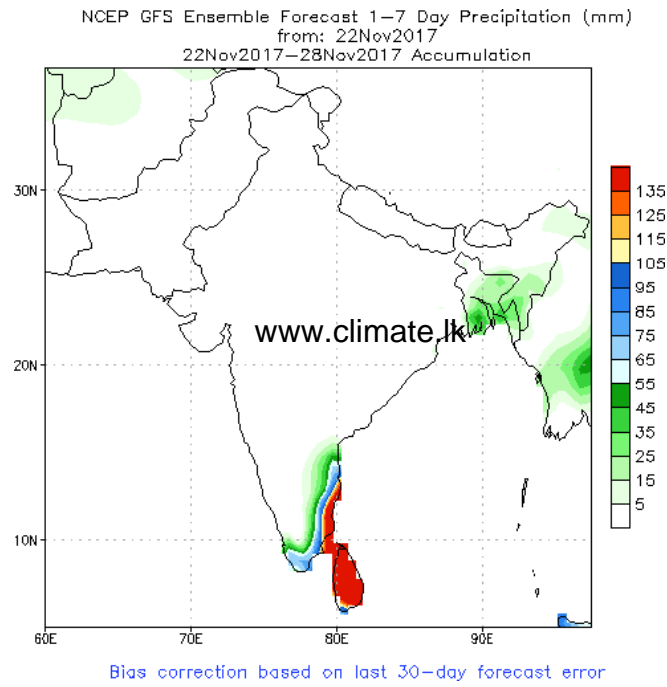


**Weekly Average SST Anomalies**

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

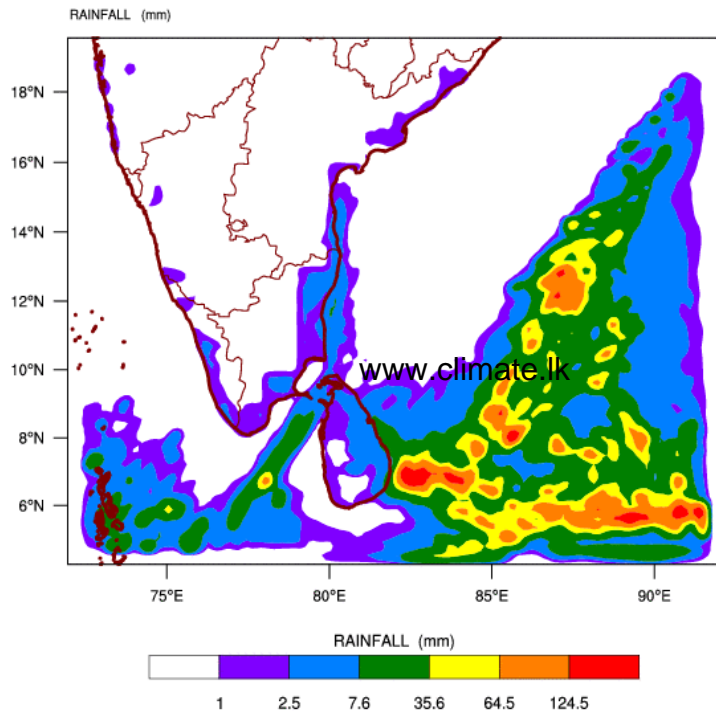


## NCEP GFS 1- 14 Day prediction

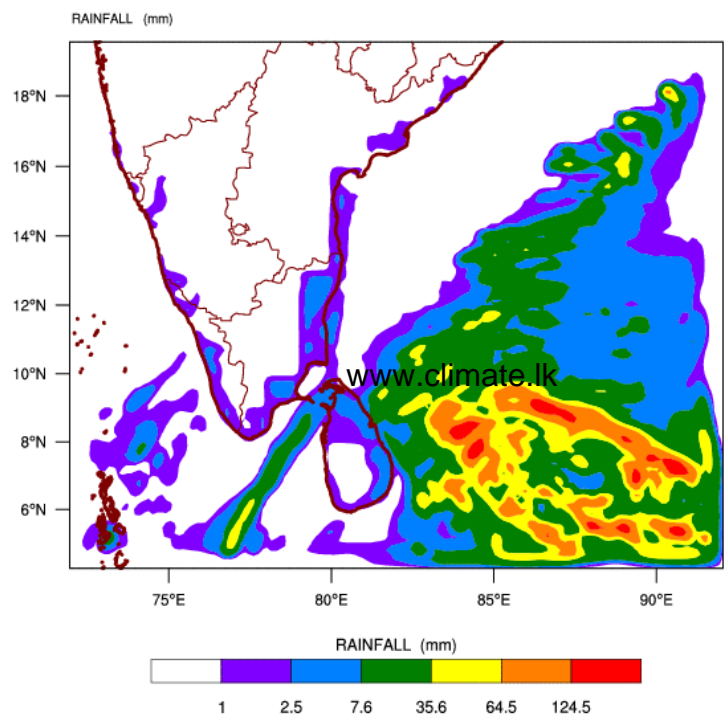


## WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 22-11-2017 valid for 03 UTC of 24-11-2017

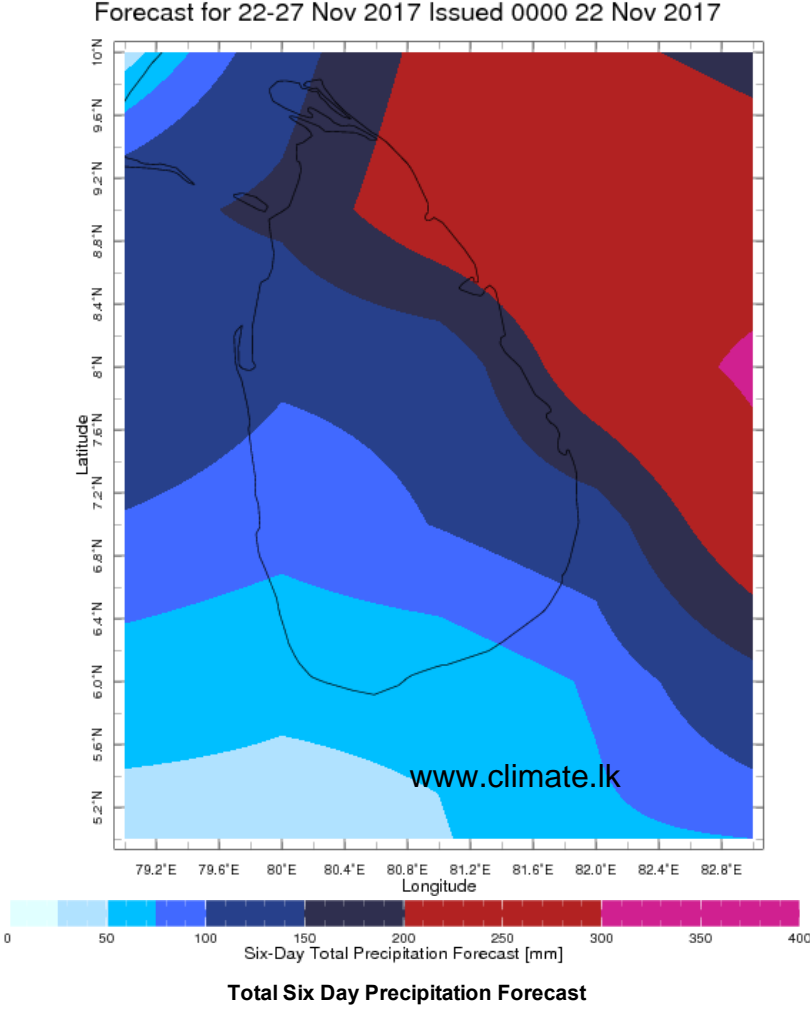
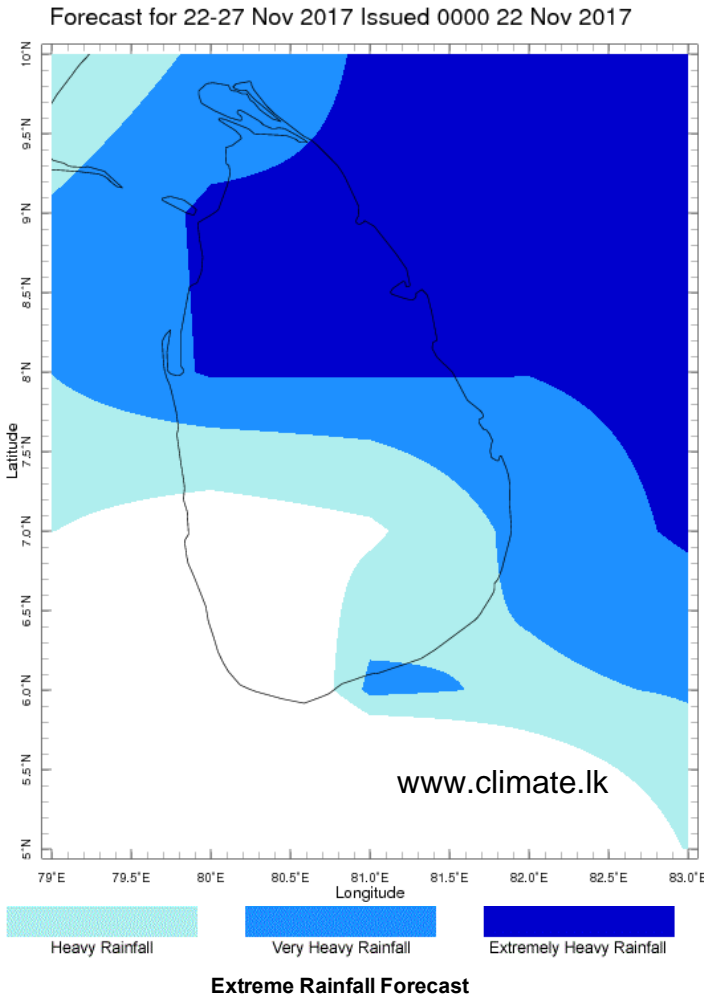


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 22-11-2017 valid for 03 UTC of 25-11-2017



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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Foundation for Environment, Climate & Technology  
C/O Mahaweli Authority of Sri Lanka,  
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