

## Experimental Climate Monitoring and Prediction

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16 November 2017

### Highlights

- The NCEP weekly rainfall forecast predicts total rainfall between 85-95 mm in Trincomalee, Batticaloa and Ampara districts during 22-28th Nov.
- Between 8-14 Nov: Rainfall up to 50 mm was recorded in Jaffna district on November 8<sup>th</sup>.
- From 5-11 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 7-13 Nov: up to 36 km/h, northeasterly winds were experienced by the northern and central regions of the island and up to 18 km/h in the southern and southeastern regions.
- Average sea surface temperature was observed in the seas around Sri Lanka.

### Monitoring Rainfall

**Weekly Monitoring:** On November 8<sup>th</sup> Jaffna district received up to 50 mm of rainfall; Mannar, Kilinochchi, Mannar, Galle and Matara districts up to 30 mm; Mullaitivu, Vavuniya, Anuradhapura, Puttalam and Ratnapura districts up to 20 mm. On the 9<sup>th</sup> eastern regions of Jaffna and Kilinochchi districts received up to 20 mm of rainfall. On the 10<sup>th</sup>, Jaffna and Kilinochchi districts received up to 30 mm of rainfall; and Ampara and Monaragala district up to 20 mm. On the 11<sup>th</sup> Vavuniya district received up to 20 mm of rainfall; and Mullaitivu, Anuradhapura, Batticaloa and Badulla districts up to 15 mm. On the 12<sup>th</sup>, Puttalam and Kurunegala districts received up to 30 mm of rainfall; Anuradhapura and Gampaha districts up to 20 mm; and many parts of the island up to 10 mm. On the 13<sup>th</sup>, Madawachchiya region in Anuradhapura district and Ahangama and Pitabeddara regions in Matara district received up to 20 mm of rainfall. No significant rainfalls were recorded in any part of the island on the 7<sup>th</sup>.

**Total Rainfall for the Past Week:** The RFE 2.0 tool shows total rainfall of 50-75 mm in Jaffna district; up to 25-50 mm in Kilinochchi, Mullaitivu, Kurunegala and Matara districts; up to 10-25 mm Vavuniya, Mannar, Batticaloa, Anuradhapura, Puttalam, Matale, Ampara, Gampaha, Colombo, Kalutara, Raatnapura and Galle districts; and 5-10 mm in rest of the island. It also shows below average rainfall up to 50-100 mm in Puttalam, Kurunegala, Polonnaruwa, Matale, Kandy, Nuwara Eliya, Ampara, Badulla, Monaragala, Kegalla, Ratnapura, Gampaha, Colombo, Kalutara and Galle districts; and up to 25-50 mm in Mannar, Vavuniya, Anuradhapura, Matara and Hambantota districts.

**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 9, 2017**

In early November 2017, the tropical Pacific reflected weak La Niña conditions, with SSTs in the east-central tropical Pacific at the threshold for 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 15<sup>th</sup> -21<sup>st</sup> Nov: Total rainfall between 55-65 mm in Kegalle and Ratnapura districts; between 45-55 mm in Gampaha, Colombo, Nuwara Eliya and Kalutara districts; between 35-45 mm in Kandy, Kurunegala, Badulla and Galle districts; between 25-35 mm in Puttalam, Matale, Ampara, Monaragala and Matara districts; between 15-25 mm in Anuradhapura, Polonnaruwa, Trincomalee, Batticaloa and Ampara districts; Up to 5 mm total rainfall rest of the island.

From 22<sup>nd</sup> – 28<sup>th</sup> Nov: Total rainfall between 85-95 mm in Trincomalee, Batticaloa, Polonnaruwa and Ampara districts; between 75-85 mm in Jaffna, Matale, Badulla and Monaragala districts; between 65-75 mm in Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura, Kandy, Nuwara Eliya, Kegalle, Colombo and Ratnapura districts; between 55-65 mm in Kurunegala and Gampaha districts ; Up to 55 mm total rainfall rest of the island.

**IMD WRF Forecast:**

17<sup>th</sup> Nov: Up to 7.6 mm of rainfall in Anuradhapura, Trincomalee and Polonnaruwa districts; Up to 2.5 mm in Jaffna, Kilinochchi, Mullaitivu, Mannar, Vavuniya, Puttalam, Gampaha, Colombo, Kalutara, Galle, Matara, Hambantota and Batticaloa districts;

18<sup>th</sup> Nov: Up to 2.5 mm of rainfall in Jaffna, Kilinochchi, Mullaitivu, Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Puttalam, Gampaha, Colombo, Kalutara, Galle, Matara, Hambantota, Ampara and Batticaloa districts;

**IRI Model Forecast:**

15<sup>th</sup> – 20<sup>th</sup> Nov: Total rainfall between 25-50 mm in Matale, Kandy, Nuwara Eliya, Badulla, Monaragala, Kegalle and Ratnapura districts; Up to 25 mm total rainfall rest of the island.

**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/>

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## Weekly Hydro- Meteorological Report for Sri Lanka

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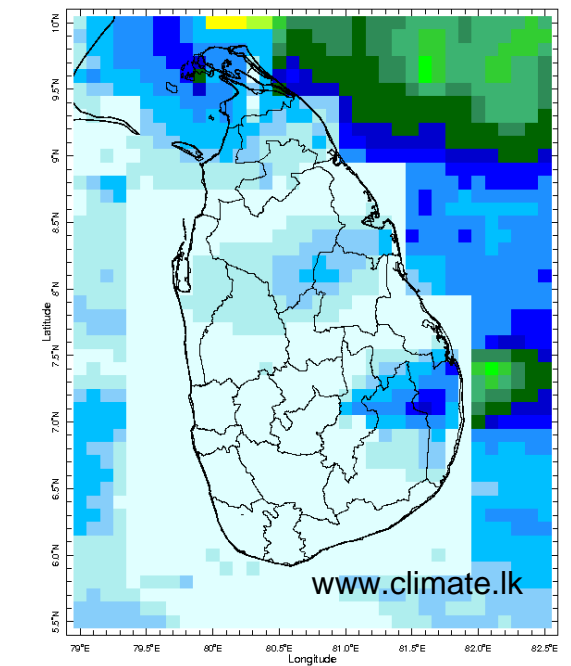
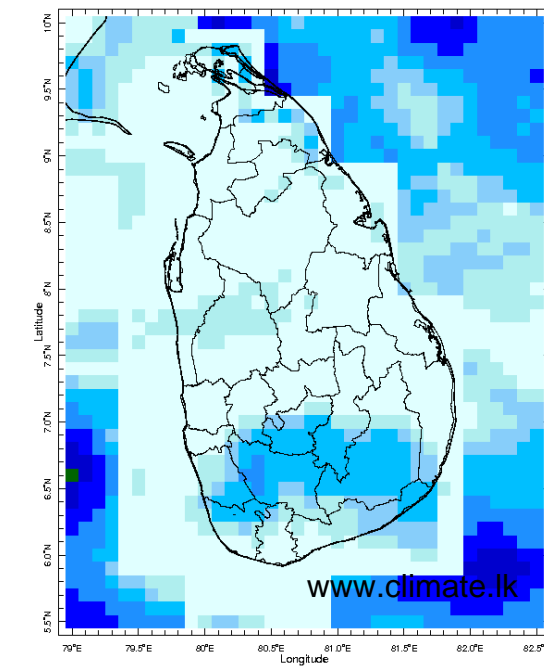
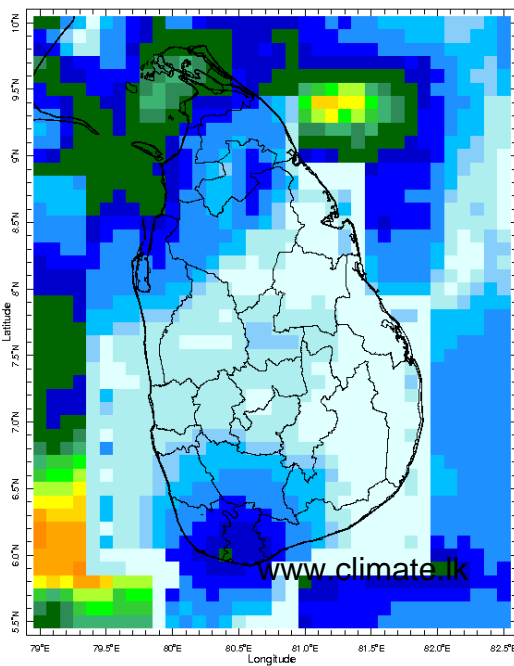
#### 2. Predictions

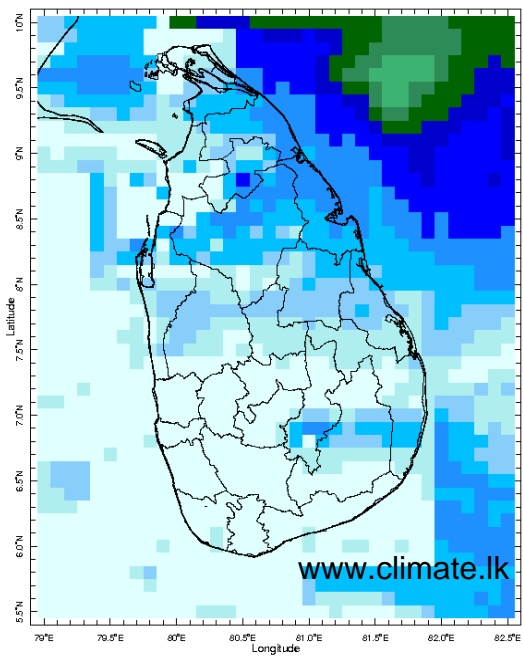
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

## MONITORING

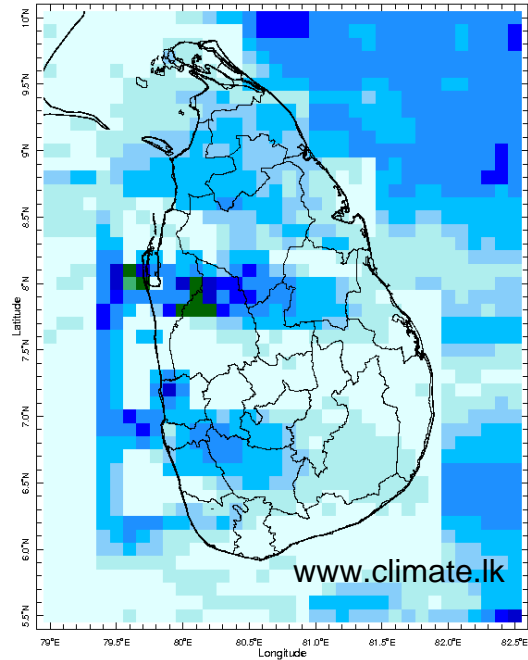
### Daily Rainfall Monitoring

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

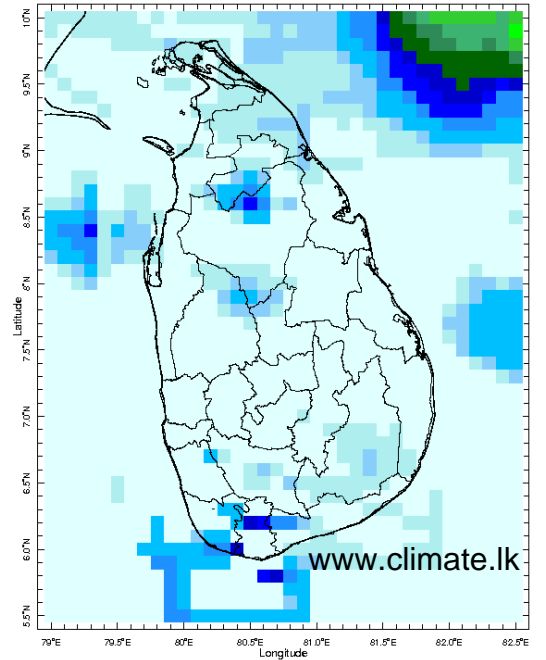




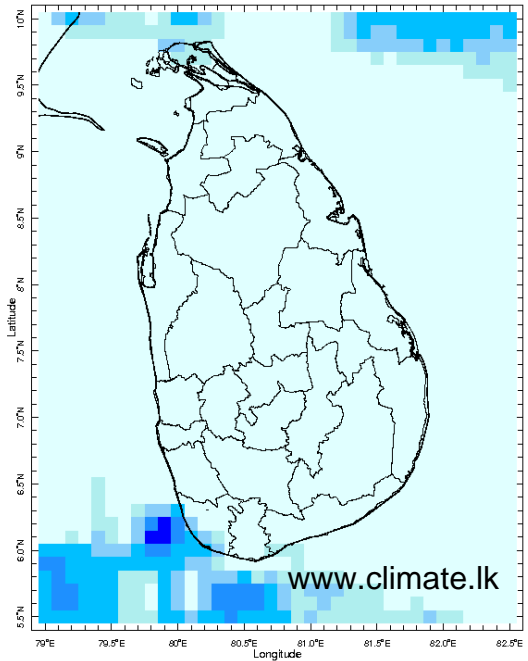
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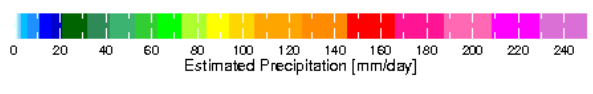
12 Nov 2017



13 Nov 2017

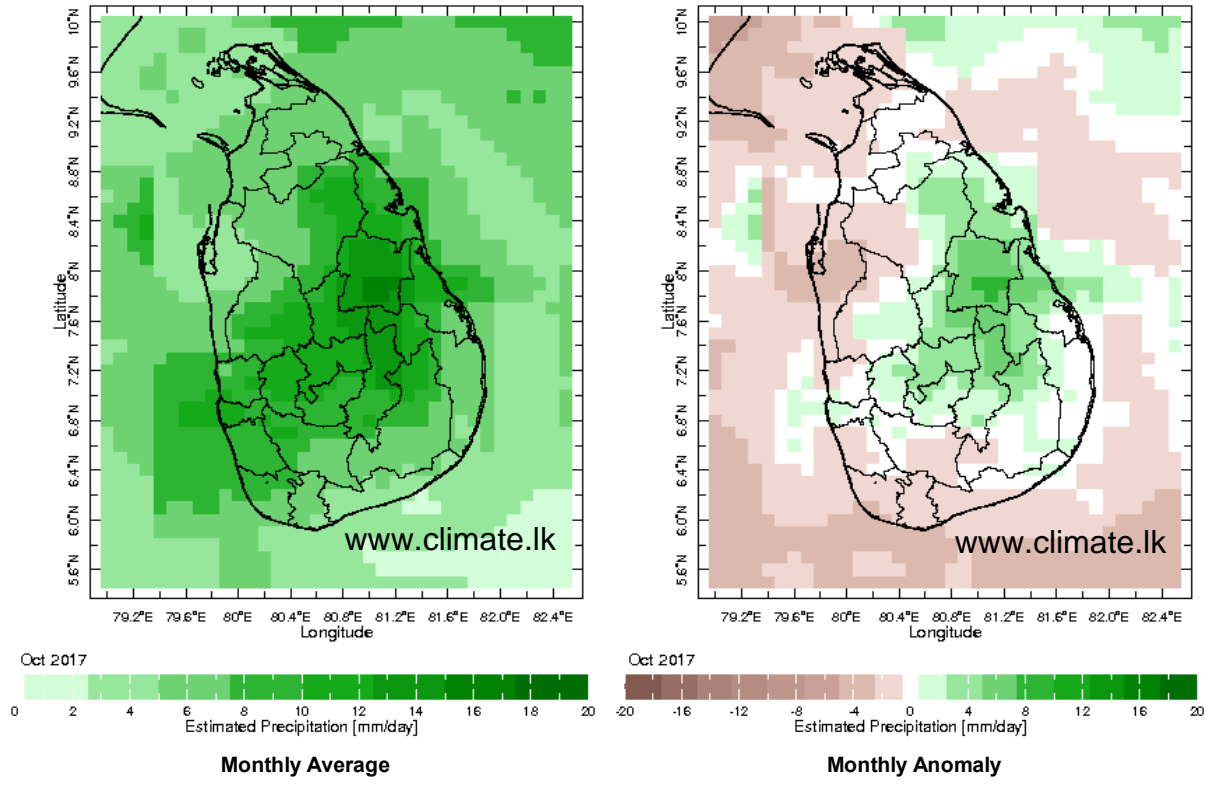


14 Nov 2017

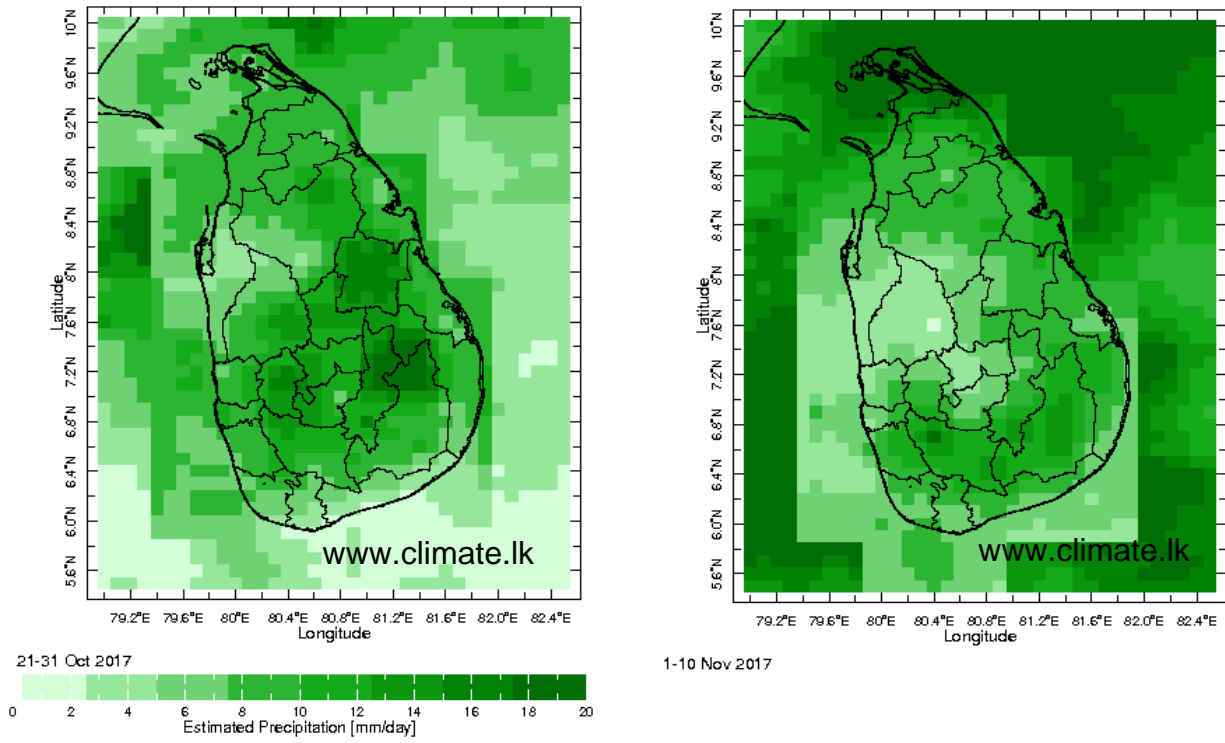


## Monthly Rainfall Monitoring

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

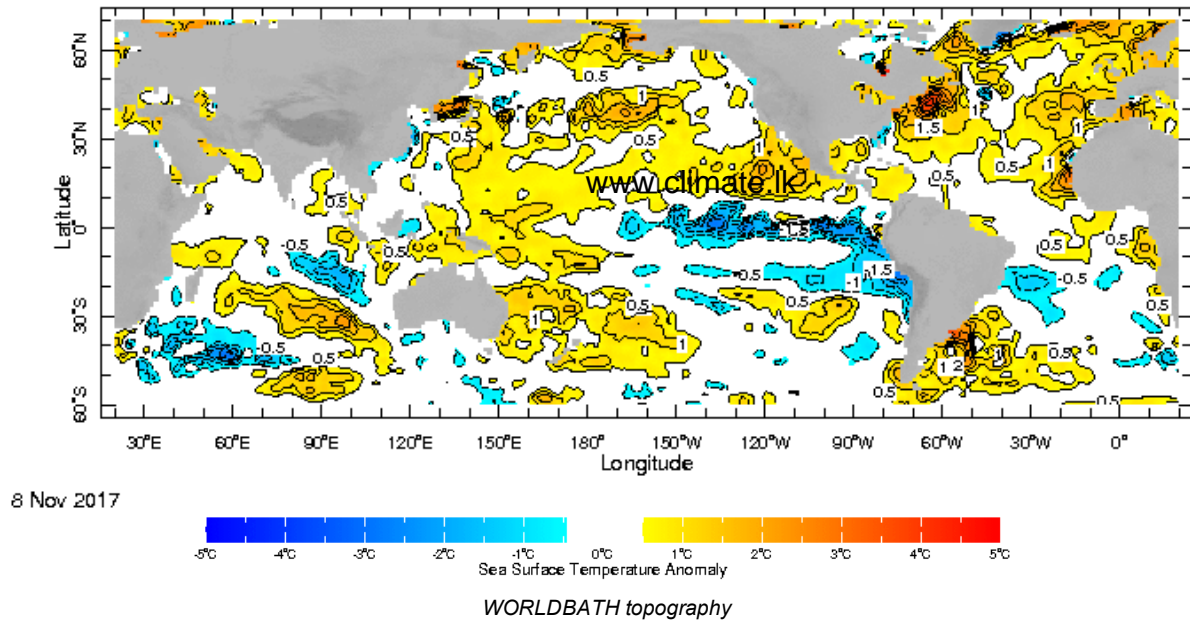


## Dekadal (10 Day) Satellite Derived Rainfall Estimates

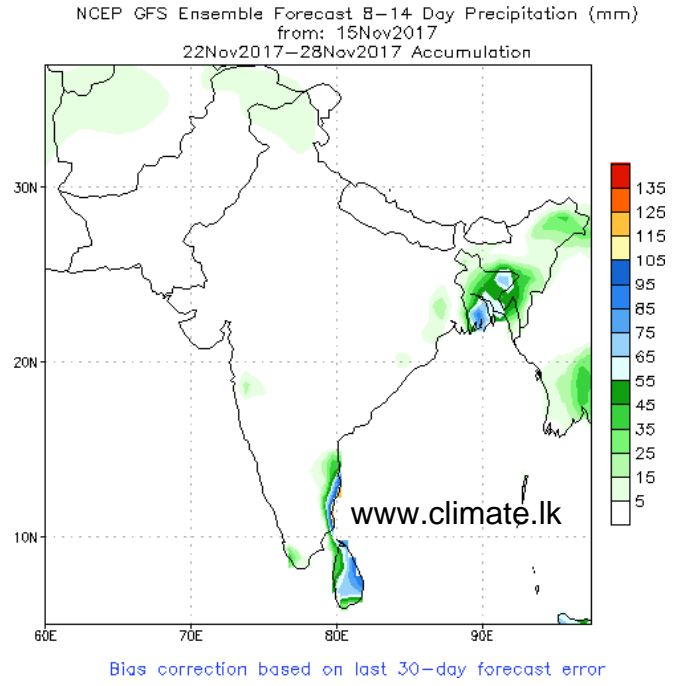
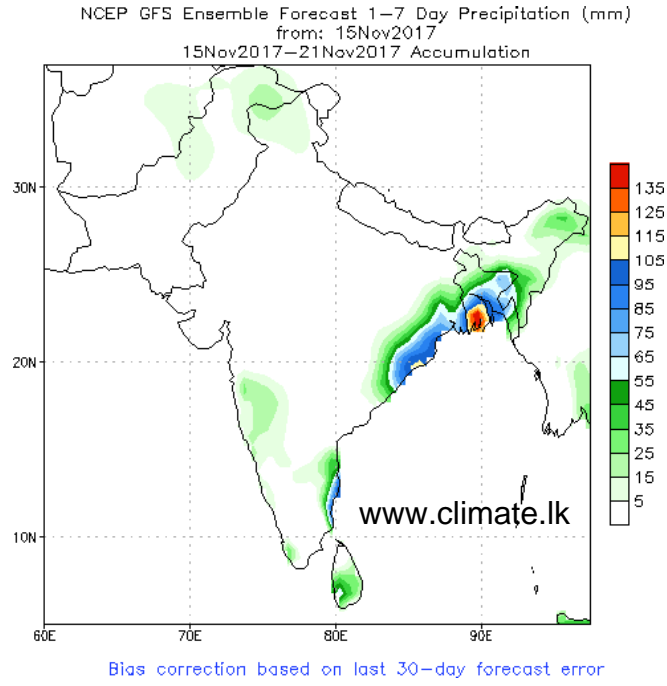


## Weekly Average SST Anomalies

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

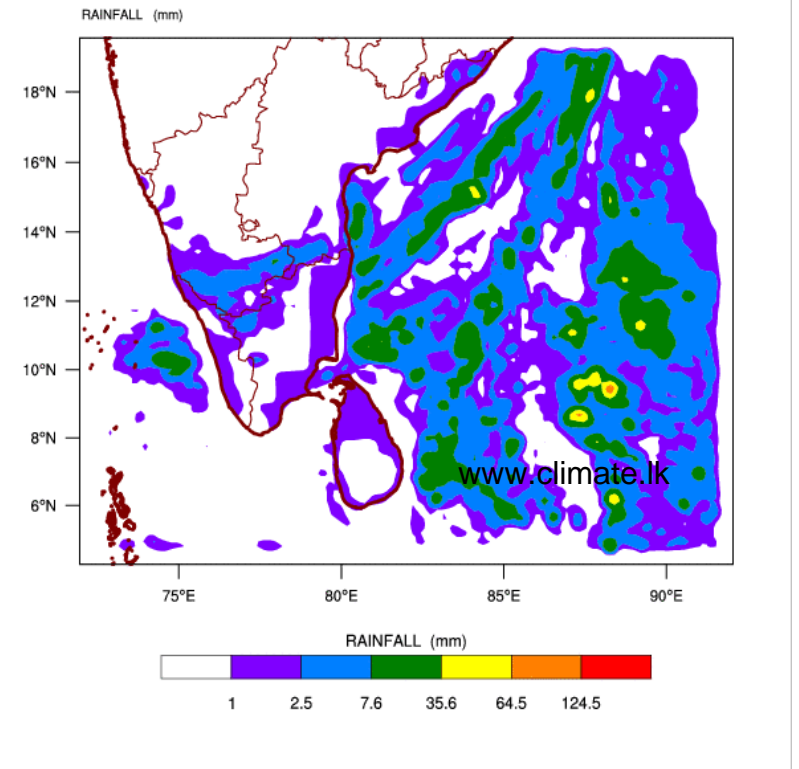


**NCEP GFS 1- 14 Day prediction**



**WRF Model Forecast (from IMD Chennai)**

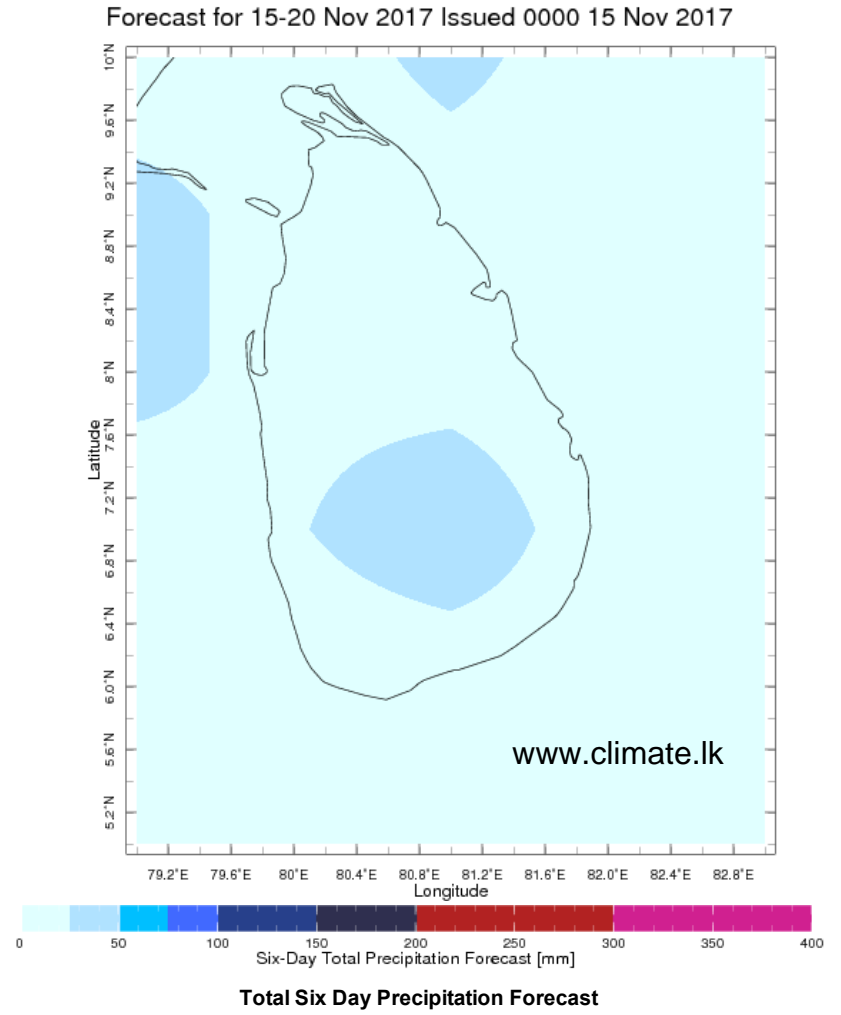
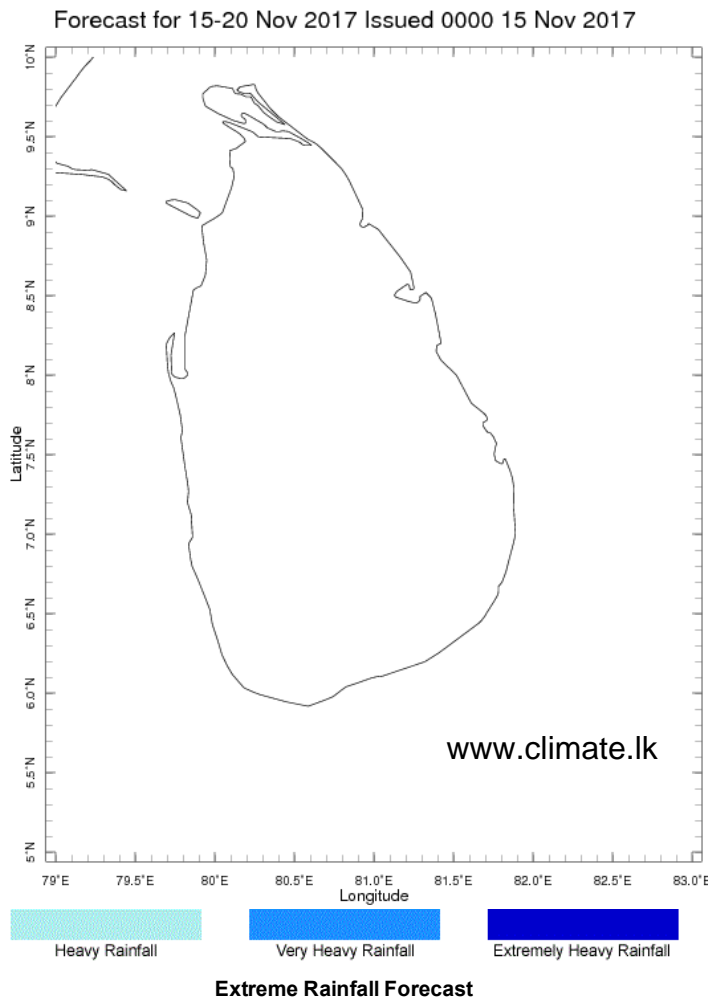
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 16-11-2017 valid for 03 UTC of 18-11-2017



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## 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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