

**Experimental Climate Monitoring and Prediction**

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**31 May 2018****Highlights**

- The IRI weekly rainfall forecast predicts total rainfall between 150-200 mm in Kalutara and Galle districts during 30<sup>th</sup> May-04<sup>th</sup> Jun.
- Between 23-29 May: up to 90 mm of rainfall was recorded in Trincomalee district on the 24<sup>th</sup>.
- From 20-26 May: minimum temperature of 20 °C was recorded from Nuwara Eliya district while Ampara district recorded a maximum temperature between 35-40 °C.
- From 22-28 May: up to 36 km/h, southwesterly winds were experienced by the entire island.
- 0.5 °C above average sea surface temperature was observed in the seas around Sri Lanka.

**Monitoring****Rainfall**

**Weekly Monitoring:** On May 23<sup>rd</sup>, Colombo district received up to 60 mm of rainfall; Jaffna, Gampaha, Kalutara, Kegalla, Nuwara Eliya, Galle and Ratnapura districts up to 50 mm; Kilinochchi, Mullaitivu, Puttalam, Kurunegala, Kandy and Matara districts up to 30 mm; and Mannar, Vavuniya, Trincomalee, Polonnaruwa, Batticaloa, Ampara, Monaragala, Badulla and Anuradhapura districts up to 20 mm. On the 24<sup>th</sup>, Trincomalee district received up to 90 mm of rainfall; Puttalam and Kurunegala districts up to 60 mm; Mullaitivu, Anuradhapura, Polonnaruwa, Kandy and Ratnapura districts up to 50 mm; Vavuniya, Matale, Nuwara Eliya, Badulla, Ampara, Gampaha, Colombo, Kalutara and Galle districts up to 30 mm; and rest of the country up to 20 mm. On the 25<sup>th</sup>, Kurunegala district received up to 50 mm of rainfall; Puttalam, Kegalla, Gampaha, Badulla and Monaragala districts up to 30 mm; Anuradhapura, Matale, Kandy, Nuwara Eliya, Colombo, Ratnapura and Ampara districts up to 20 mm. On the 26<sup>th</sup>, Colombo, Gampaha and Kegalla districts received up to 50 mm; Puttalam, Kurunegala and Kalutara district up to 30 mm; and Galle district up to 20 mm. On the 27<sup>th</sup>, Puttalam, Kurunegala, Anuradhapura, Gampaha, Kegalla, Kandy, Colombo, Nuwara Eliya, Kalutara, Galle and Hambantota districts received up to 20 mm of rainfall; and rest of the country up to 10 mm. On the 28<sup>th</sup>, Gampaha district received up to 30 mm of rainfall; Puttalam, Kurunegala, Anuradhapura, Kegalla, Kandy, Nuwara Eliya, Colombo and Ratnapura districts up to 20 mm. No significant rainfalls were recorded in any part of the island on the 29<sup>th</sup>.

**Total Rainfall for the Past Week:** The RFE 2.0 tool shows total rainfall 100-150 mm of total rainfall in Puttalam, Gampaha, Kegalla, Kurunegala, Ratnapura, Colombo and Kalutara districts; up to 75-100 mm in Trincomalee, Kandy, Nuwara Eliya and Galle districts; and 25-50 mm in rest of the country. Above average rainfall up to 100-200 mm is shown for Puttalam district; up to 100-200 mm in Kurunegala, Anuradhapura, Trincomalee, Kalutara, Colombo, Kegalla, Ratnapura and Gampaha districts. Below average rainfall up to 25-50 mm in northern regions of Badulla and Monaragala districts.

**Monthly Monitoring:** During April - above average rainfall conditions were experienced by southwestern regions of the island; and rest of the country experienced below average rainfall. Vavuniya and Jaffna districts received up to 150 mm below average rainfall; and Kilinochchi, Mullaitivu, Anuradhapura, Trincomalee, Anuradhapura, Polonnaruwa, Batticaloa, Ampara, Badulla, Monaragala, Matale, Kandy and Kurunegala districts up to 90 mm. Galle and Matara districts received above average rainfall up to 150 mm; and Gampaha, Colombo, Kalutara, Kegalla, Ratnapura and Nuwara Eliya districts up to 90 mm. The CPC Unified Precipitation Analysis tool shows ~500 mm of total rainfall in Kurunegala, Kegalla, Ratnapura, Gampaha, Colombo, Kalutara, Galle and Matara districts; up to 300 mm Puttalam, Kurunegala, Kandy, Badulla, and Monaragala districts; up to ~200 mm in Anuradhapura, Matale and Hambantota districts; and up to 150 mm in Mannar, Polonnaruwa and Ampara districts.

**Ocean State** (Text Courtesy IRI)**Pacific sea state: May 18, 2018**

In mid-May 2018, the east-central tropical Pacific waters reflected ENSO-neutral conditions. Most key atmospheric variables also indicated neutral conditions, although the upper level wind anomalies show remnants of La Niña. The subsurface water temperature continued to be above-average. The official CPC/IRI outlook calls for neutral conditions through the September-November season, with a nearly 50% chance of El Niño development by year's end. The latest forecasts of statistical and dynamical models collectively favor weak El Niño development by year's end, but forecasters hedge on this due to low confidence at this time of year.

## **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 30<sup>th</sup> May – 05<sup>th</sup> Jun: Total rainfall between 115-125 mm in Kurunegala, Kegalle, Ratnapura, Colombo and Kalutara districts; between 105-115 mm in Anuradhapura, Matale, Gampaha, Kandy, Nuwara Eliya and Galle districts; between 95-105 mm in Puttalam, Polonnaruwa and Matara districts; between 85-95 mm in Trincomalee district; between 75-85 mm in Vavuniya, Mullaitivu and Monaragala districts; Up to 65 mm total rainfall rest of the island.

From 06<sup>th</sup> – 12<sup>th</sup> Jun: Total rainfall between 115-125 mm in Kegalle and Ratnapura districts; between 105-115 mm in Kurunegala, Gampaha, Colombo, Kalutara and Galle districts; between 95-105 mm in Puttalam, Nuwara Eliya and Matara districts; between 85-95 mm in Anuradhapura Matale, Kandy and Hambantota districts; between 75-85 mm in Polonnaruwa Badulla and Monaragala districts.

#### **IMD NCMWRF Forecast:**

1<sup>st</sup> Jun: Up to 80 mm of rainfall in Ratnapura, Puttalam, Kurunegala, Kalutara, Galle, Hambantota, Monaragala Badulla and Ampara districts; and up to 20 mm in Batticaloa, Matale, Kegalle, Kandy, Nuwara Eliya and Matara districts.

2<sup>nd</sup> Jun: Up to 80 mm of rainfall in Kurunegala, Matale, Gampaha, Kegalle, Kandy, Kalutara, Galle, Matara, Hambantota, Ratnapura, Monaragala and Batticaloa districts; and up to 20 mm in Mullaitivu, Vavuniya, Trincomalee, Anuradhapura, Puttalam, Colombo, Nuwara Eliya, Badulla and Ampara districts.

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

From 30<sup>th</sup> May-04<sup>th</sup> Jun: Total rainfall between 150-200 mm in Kalutara and Galle districts; between 100-150 mm in Gampaha, Colombo, Kegalle, Ratnapura and Matara districts; between 75-100 mm in Puttalam, Kurunegala and Nuwara Eliya districts; between 50-75 mm in Kandy and Hambantota districts; between 25-50 mm in Matale, Badulla, Monaragala, Mullaitivu, Trincomalee and Batticaloa districts; Up to 25 mm total rainfall rest of the island.

### **MJO based OLR predictions**

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

MJO shall enhance the rainfall in Sri Lanka in the next 5 days and shall suppress in the following 10 days.

<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/>



[www.fb.com/fectsl](http://www.fb.com/fectsl)



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## Weekly Hydro- Meteorological Report for Sri Lanka

### Inside This Issue

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#### 1. Monitoring

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

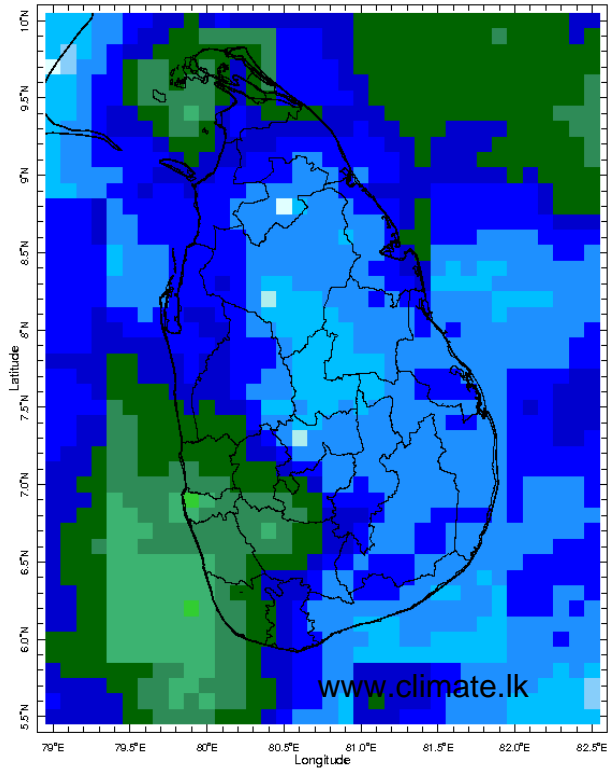
#### 2. Predictions

- 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

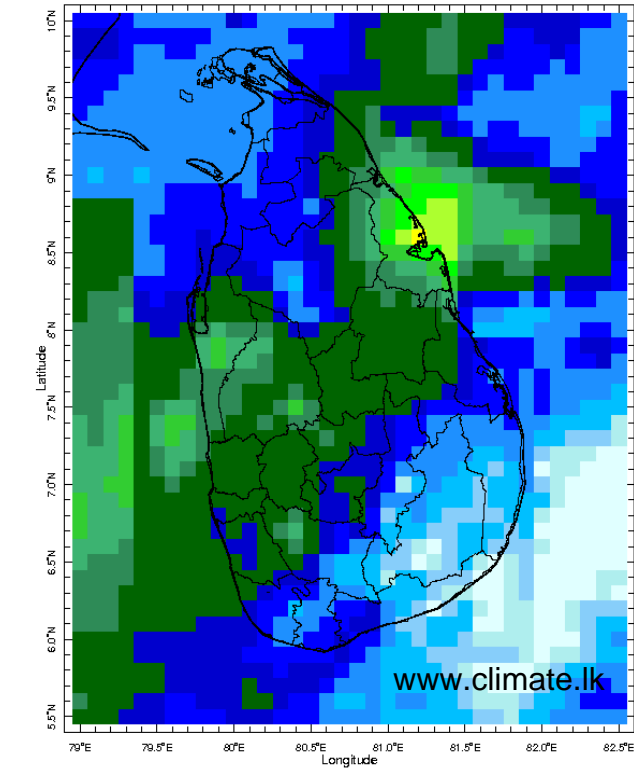
## MONITORING

### Daily Rainfall Monitoring

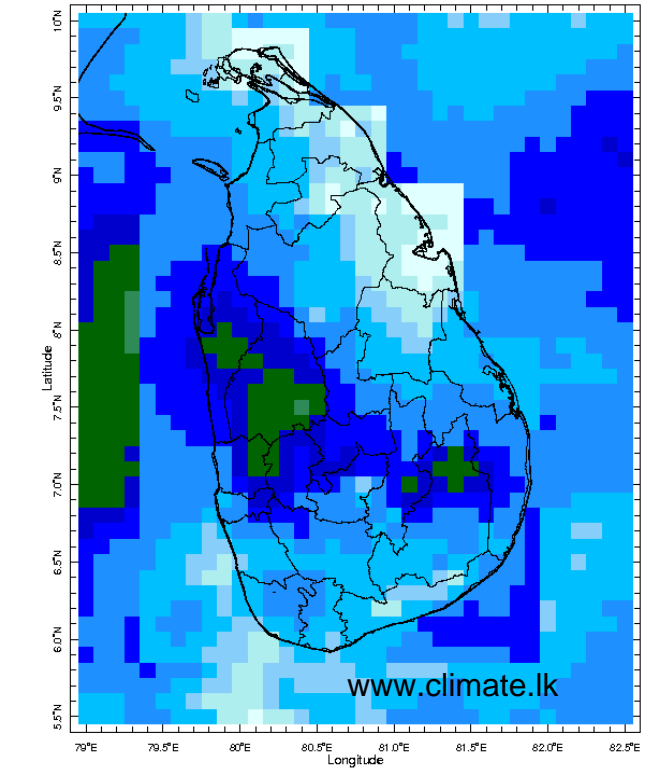
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



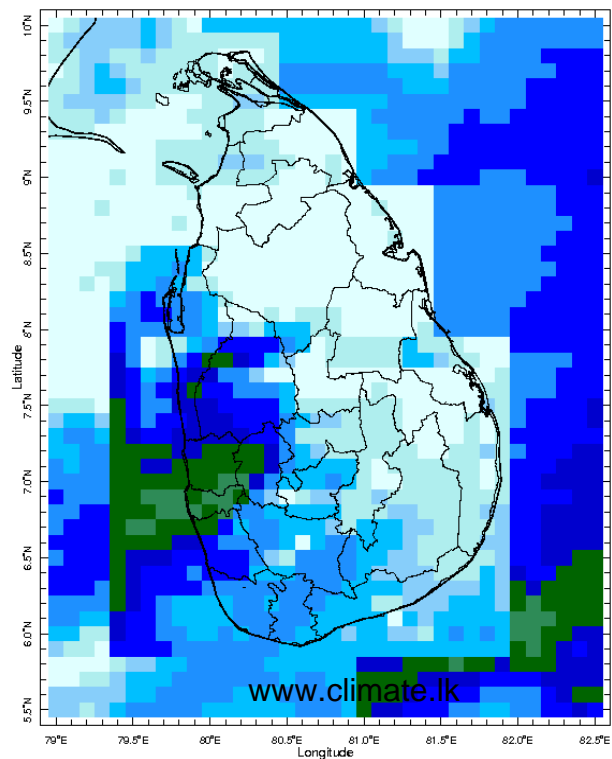
23 May 2018



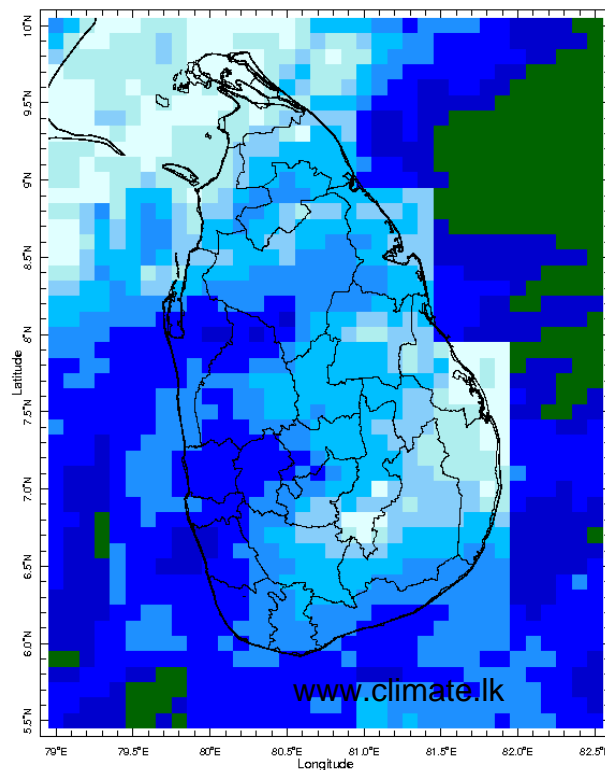
24 May 2018



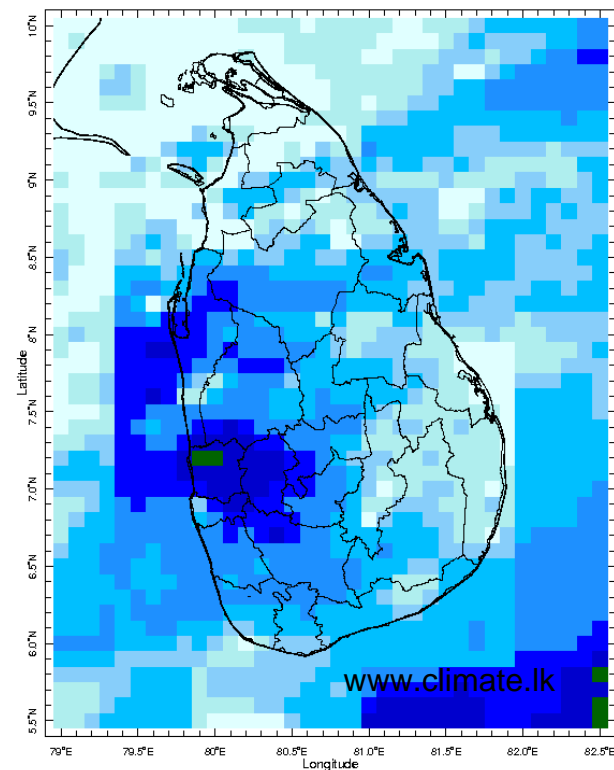
25 May 2018



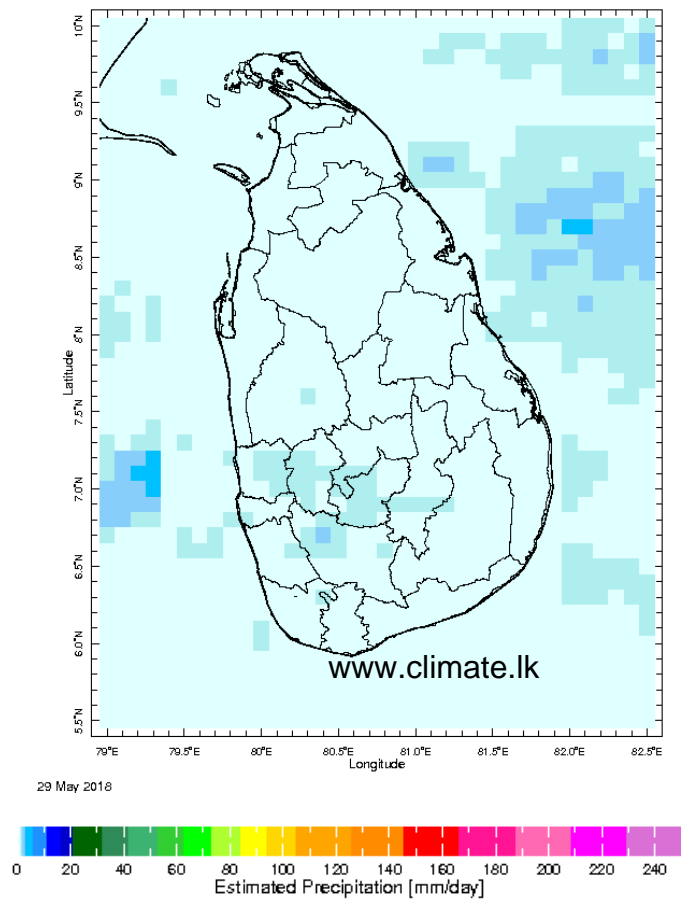
26 May 2018



27 May 2018

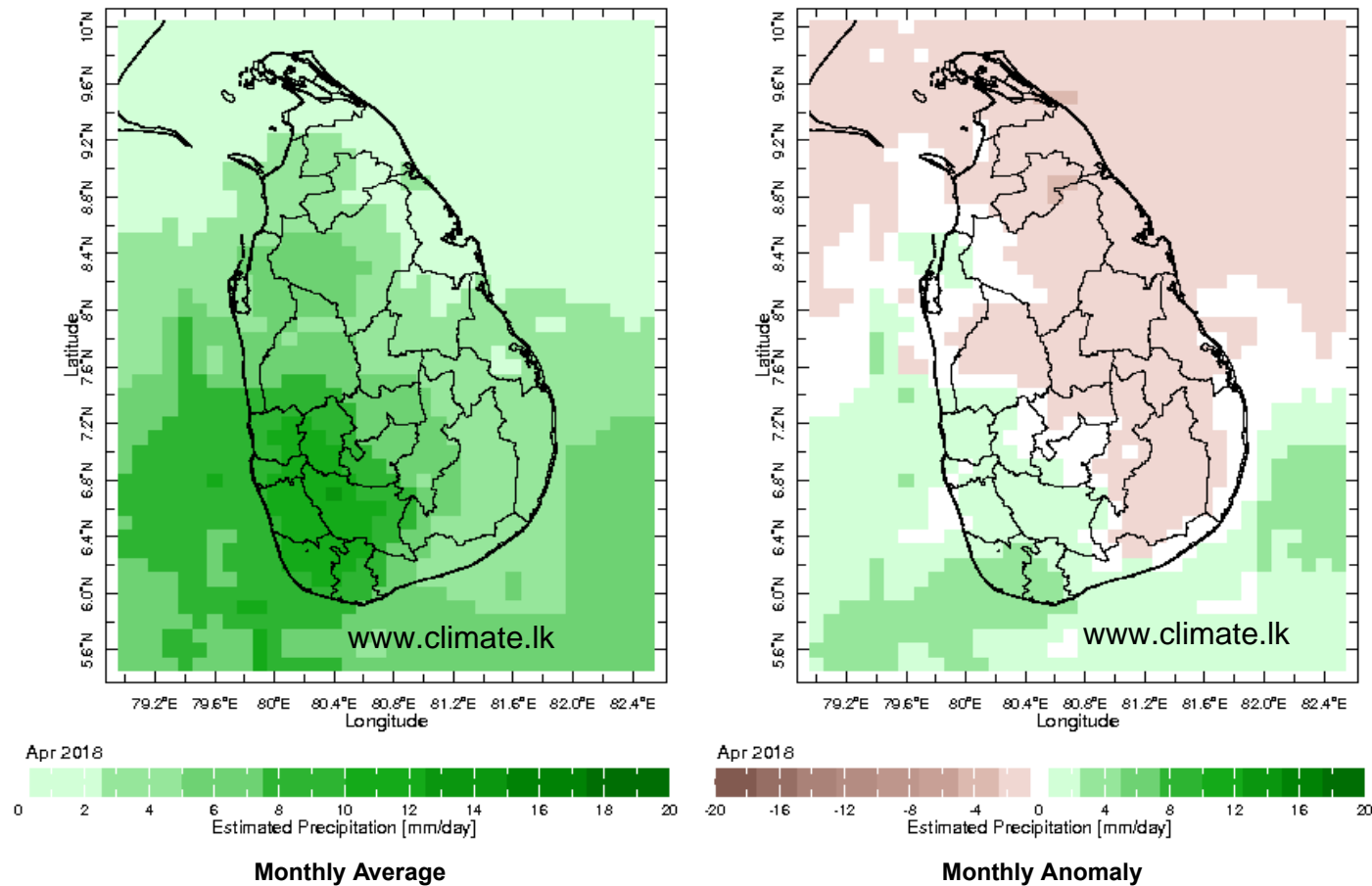


28 May 2018

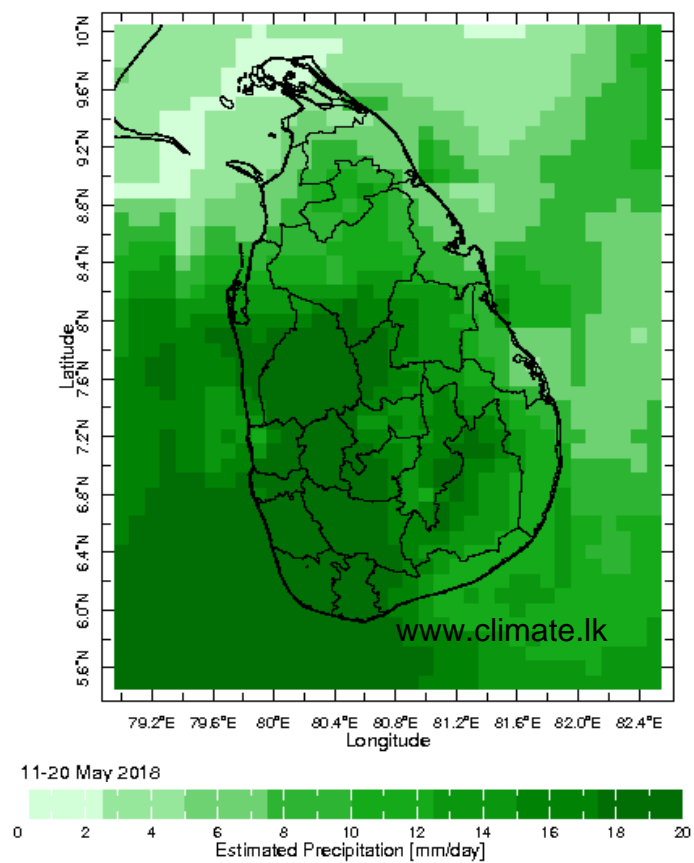
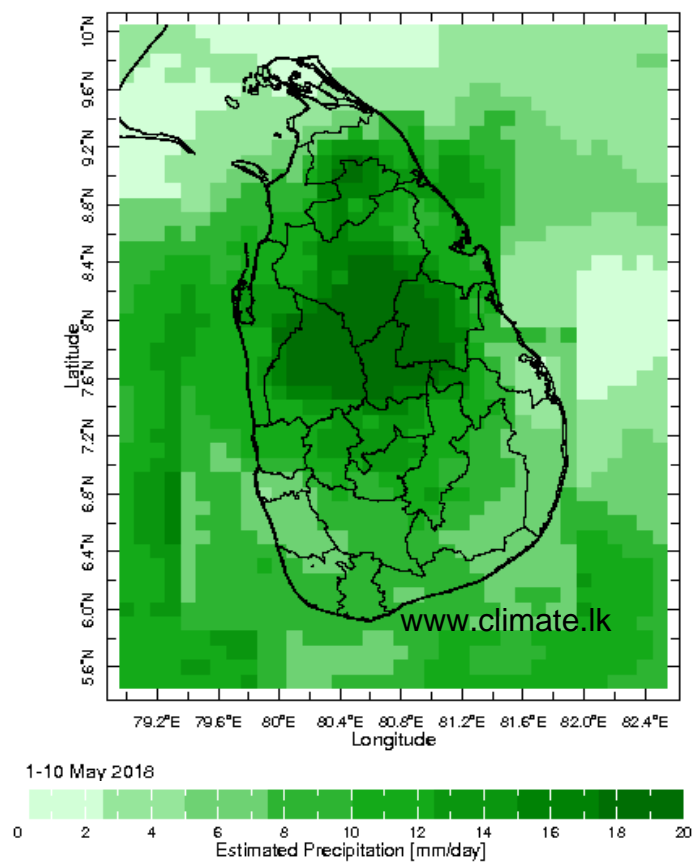


## Monthly Rainfall Monitoring

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



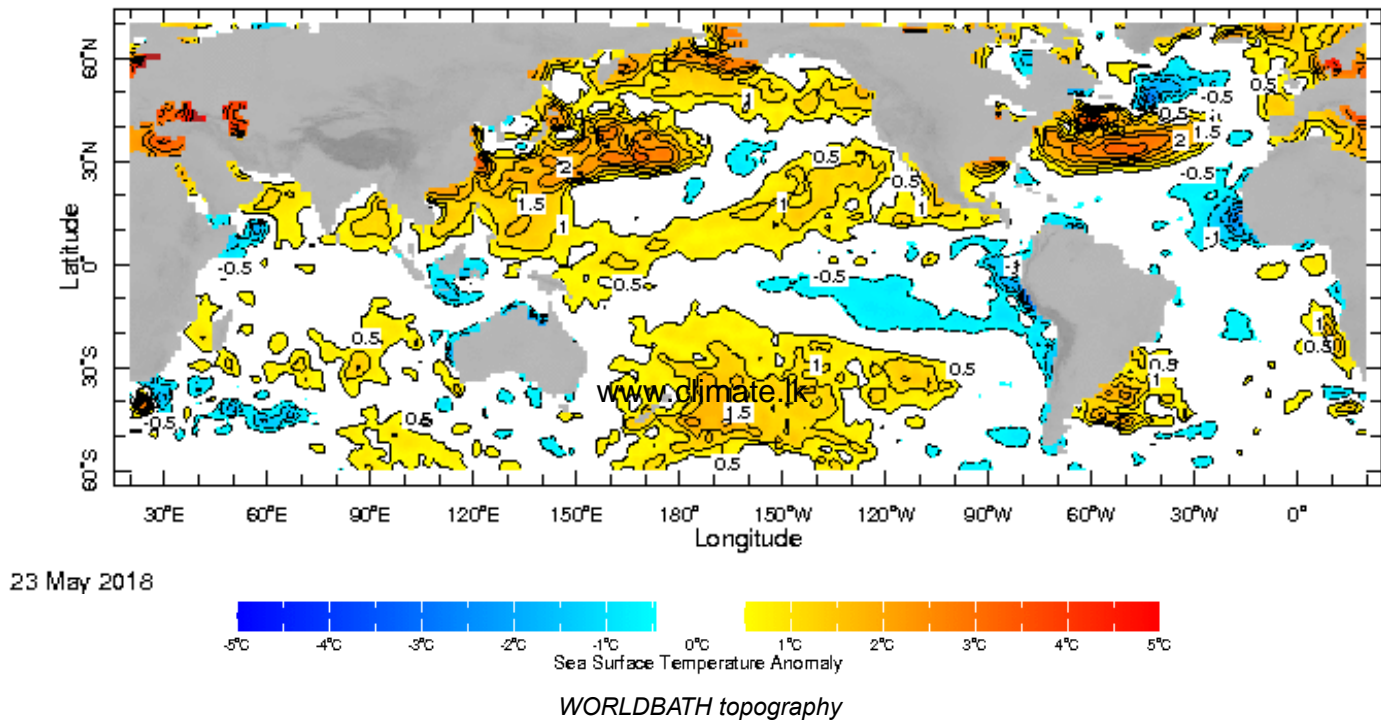
## Dekadal (10 Day) Satellite Derived Rainfall Estimates





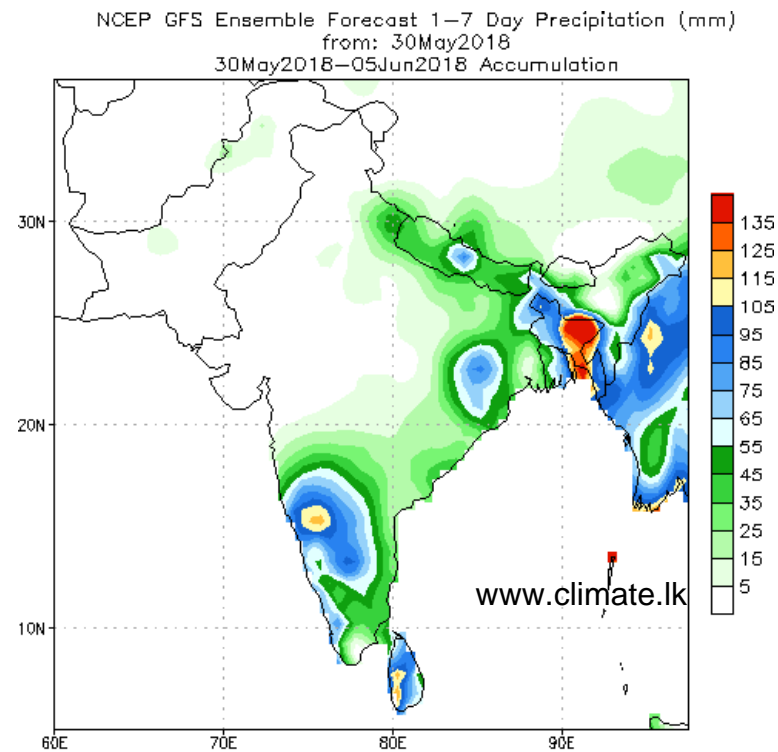
Weekly Average SST Anomalies

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

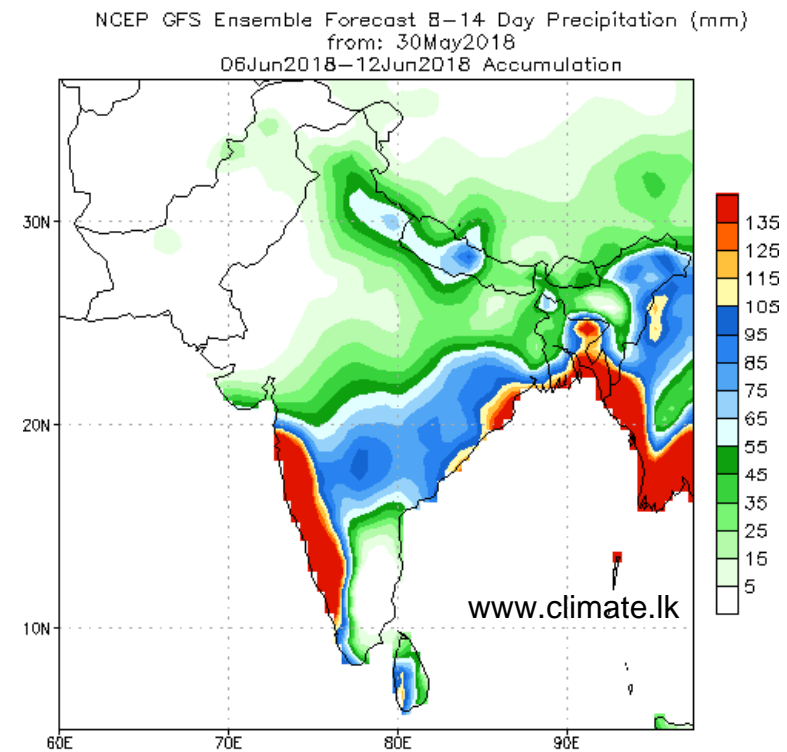


## PREDICTIONS

### NCEP GFS 1- 14 Day prediction



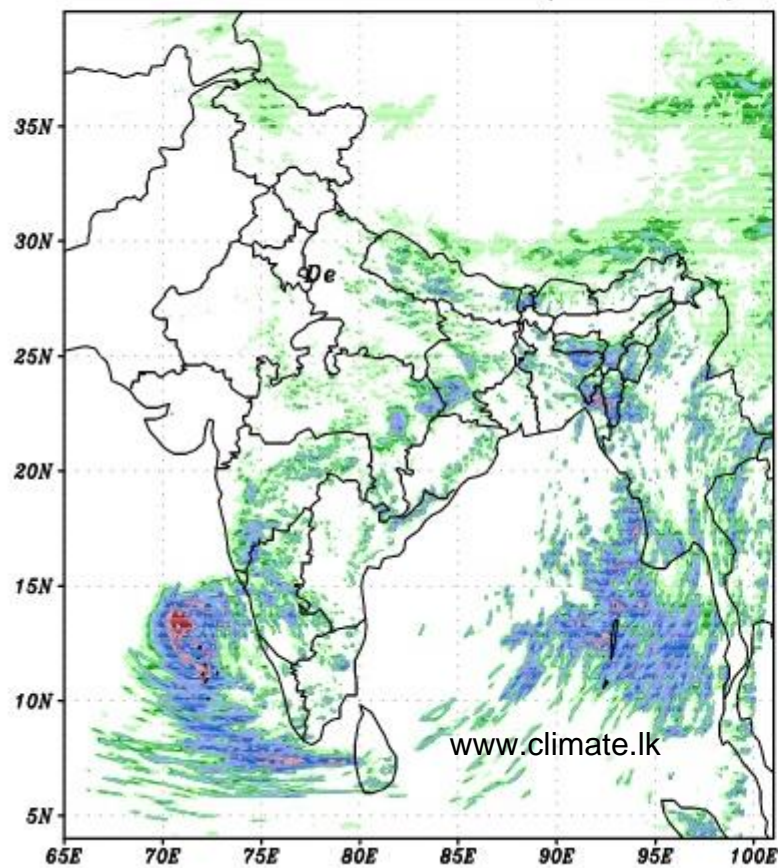
Bias correction based on last 30-day forecast error



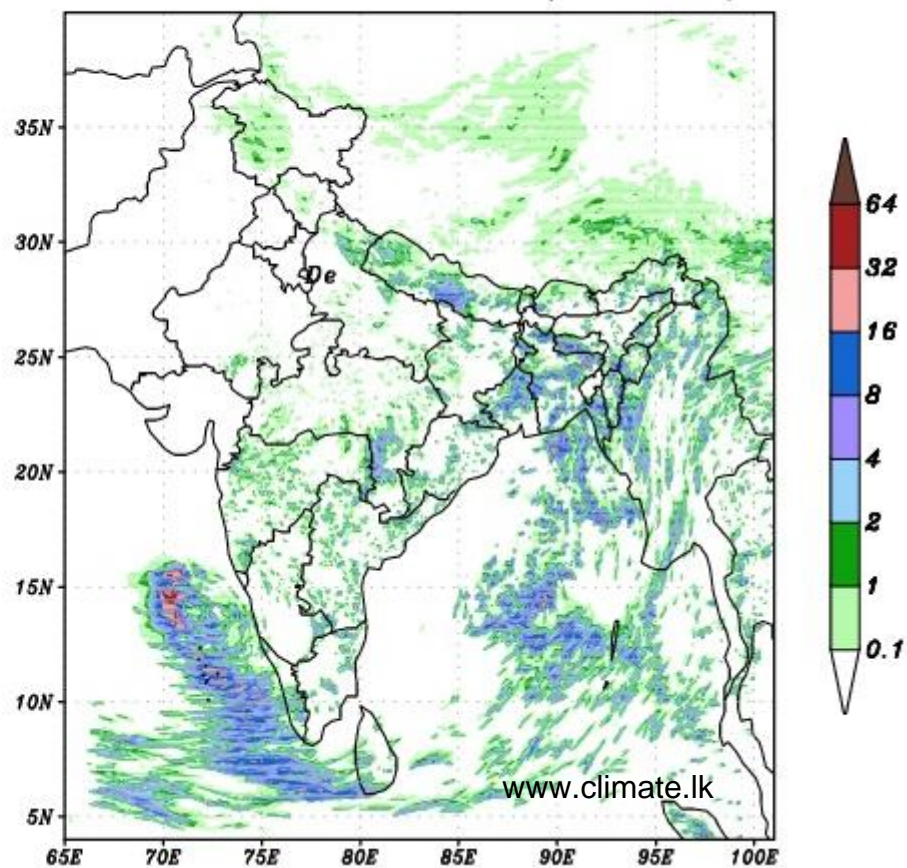
Bias correction based on last 30-day forecast error

## NCMWRF Model Forecast (from IMD)

DAY 2 FORECAST VALID ON 00Z1JUN2018  
Total Precipitation(cm) CI=0.1,1,2,4,8,..  
NCMRWF UNIFIED MODEL (REG-4Km)



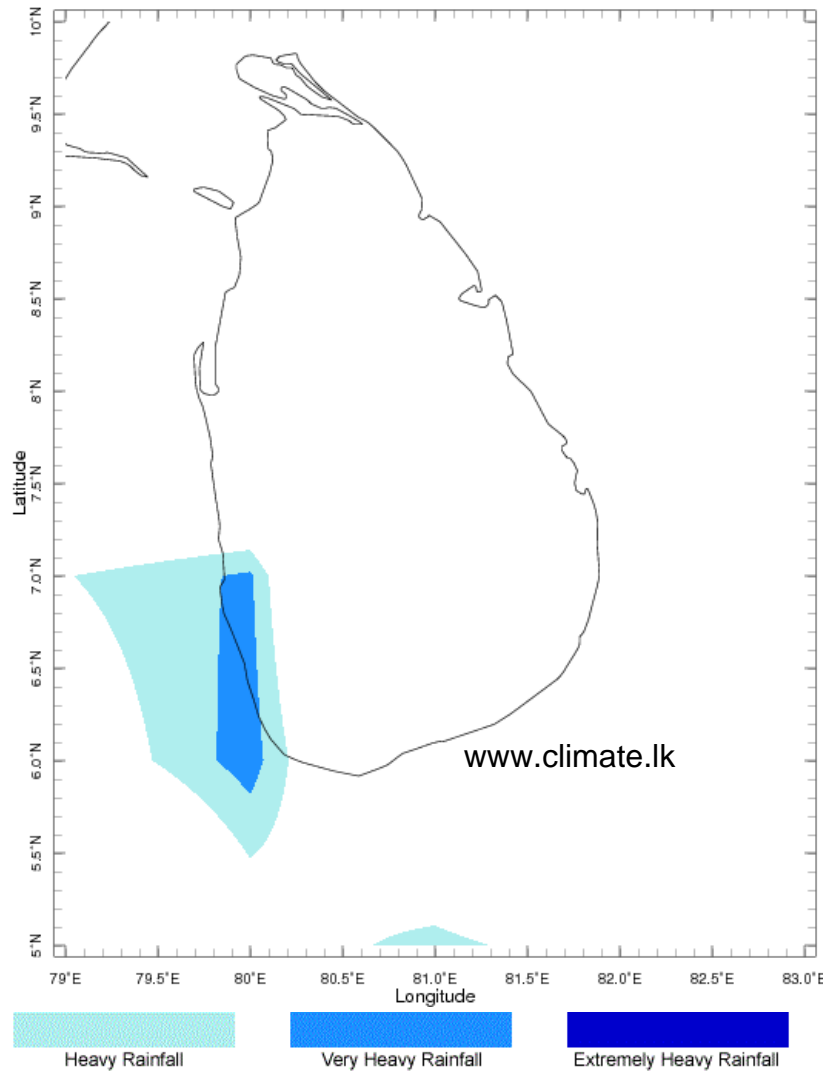
DAY 3 FORECAST VALID ON 00Z2JUN2018  
Total Precipitation(cm) CI=0.1,1,2,4,8,..  
NCMRWF UNIFIED MODEL (REG-4Km)



## Weekly Rainfall Forecast from IRI

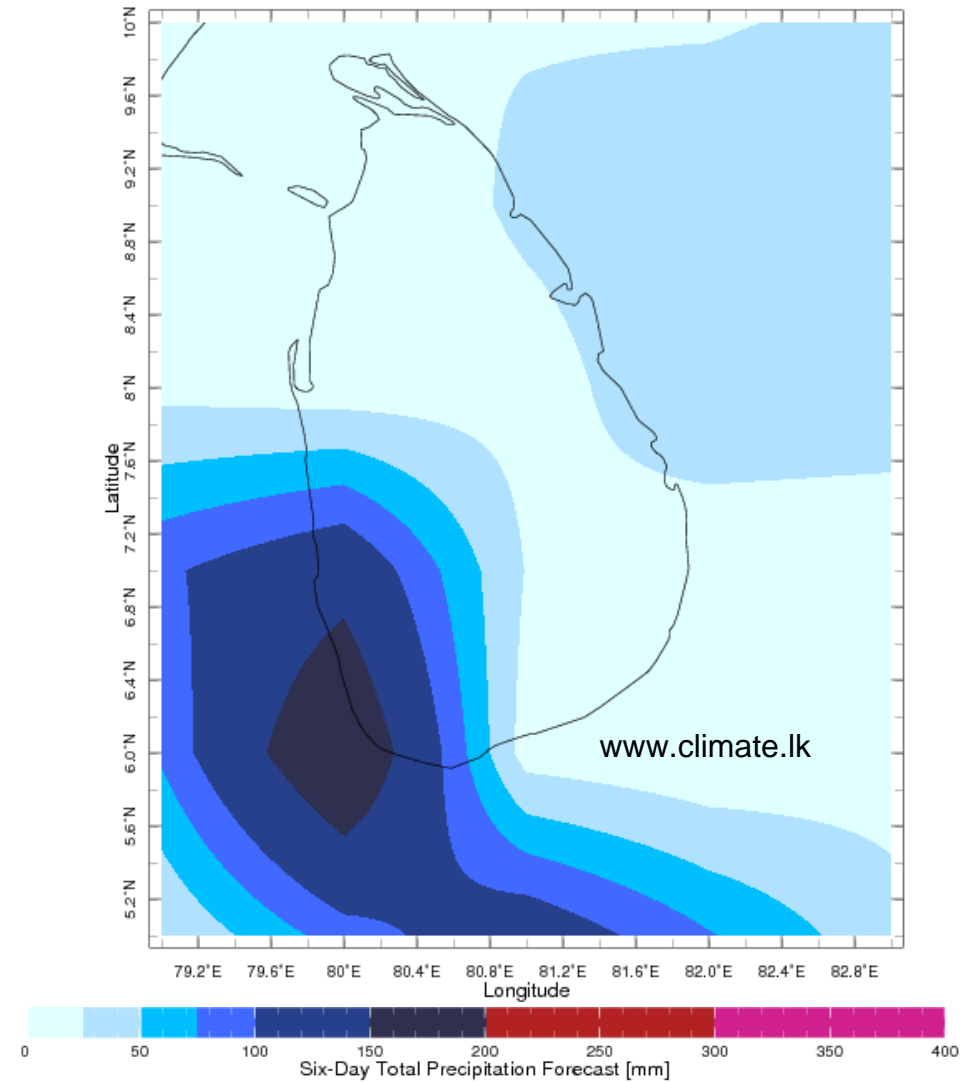
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 30 May 2018 - 4 Jun 2018 Issued 0000 30 May 2018



Extreme Rainfall Forecast

Forecast for 30 May 2018 - 4 Jun 2018 Issued 0000 30 May 2018



Total Six Day Precipitation Forecast