

**Experimental Climate Monitoring and Prediction**

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**4 May 2017****Highlights**

- The WRF model predicts up to 65 mm of rainfall in Colombo and Puttalam districts on 6th May.
- Between 26 Apr- 2 May: highest rainfalls of 100 mm were recorded on the 1<sup>st</sup> in Anuradhapura district.
- From 23-29 Apr: minimum temperature of 15 °C was recorded from Nuwara Eliya district while northern half of the island recorded a maximum temperature between 30-35 °C.
- From 25 Apr-1 May: up to 14 km/h, southwesterly winds were experienced by the southern regions; and speeds less than 7 km/h in the northern and central regions of the island.
- 0.5° C below average sea surface temperature was observed in the western seas of Sri Lanka.

**Monitoring****Rainfall**

**Weekly Monitoring:** On April 26<sup>th</sup>, several regions of Badulla and Monaragala districts received up to 20 mm of rainfall. No significant rainfalls were recorded in any part of the island during 27<sup>th</sup> and 28<sup>th</sup>. On the 29<sup>th</sup> several regions of Vavuniya, Anuradhapura and Badulla districts received up to 10 mm of rainfall. On the 30<sup>th</sup> Kumana region of Hambantota district received up to 30 mm of rainfall; and Galge region of Monaragala district up to 20 mm. On May 1<sup>st</sup>, Anuradhapura district received up to 100 mm of rainfall, Puttalam district up to 50 mm; Vavuniya, Mullaitivu, and Trincomalee and several regions of Kurunegala district received up to 20 mm. On the 2<sup>nd</sup> Matale district received up to 80 mm of rainfall; Kurunegala district up to 60 mm; Anuradhapura district up to 30 mm; and Badulla and Monaragala districts up to 20 mm.

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

**Monthly Monitoring:** During April - below average rainfall conditions were experienced in the entire island. Matale, Gampaha, Colombo, Ratnapura and Kandy districts received up to 210 mm below average rainfall; and many parts of the island received up to 150 mm. Monthly average rainfall for Anuradhapura, Kurunegala, Gampaha, Colombo, Ratnapura, Kegalla, Galle and Matara districts amounted to 210 mm/month; and 150 mm/month for Puttalam, Kandy, Matale, Badulla, Hambantota and Monaragala districts. The CPC Unified Precipitation Analysis tool shows ~200 mm of total rainfall in Anuradhapura, Gampaha, Colombo, Kalutara, Galle and Ratnapura districts; up to ~100 mm in Matale, Kandy, Nuwara Eliya, Badulla, Monaragala, Kurunegala and Hambantota districts; and up to ~75 mm Ampara, Puttalam and Mannar districts;

**Ocean State** (Text Courtesy IRI)**Pacific sea state: April 20, 2017**

By mid-April 2017, the tropical Pacific remained in an ENSO-neutral state, with above-average SSTs present in the eastern Pacific Ocean, and near-average SSTs across the central and east-central part of the basin. Across the western and central Pacific, the pattern of cloudiness, rainfall, and winds remains suggestive of La Nina conditions. The collection of ENSO prediction models indicates increasing chances of El Nino into the summer and fall of 2017.

## **Indian Ocean State**

0.5° C below average sea surface temperature was observed in the western seas of Sri Lanka.

## **Predictions**

### **Rainfall**

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

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

From 3rd – 9th May: Total rainfall between 25-35 mm in Ratnapura district; between 15-25 mm in Puttalam, Anuradhapura, Kurunegala, Matale, Kegalla, Gampaha and Matara districts; between 5-15 mm in North, Uva provinces and Polonnaruwa, Kandy, Nuwara Eliya and Hambantota districts.

From 10th -16th May: Total rainfall between 25-35 mm in Ratnapura and Matara districts; between 15-25 mm in Gampaha and Kegalla districts; between 5-15 mm in Puttalam, Anuradhapura, Kurunegala, Matale, Kandy, Nuwara Eliya, Badulla, Monaragala and Hambantota districts.

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

6th May: Up to 65 mm of rainfall in Colombo and Puttalam districts; up to 36 of rainfall in Gampaha, Kegalla, Nuwara Eliya, Kalutara, Ratnapura, Mannar, Anuradhapura, Puttalam, Kurunegala and Matale; up to 8mm of rainfall in Mullaitivu, Vavuniya, Polonnaruwa, Kandy, Nuwara Eliya and Matara; up to 3mm of rainfall in Galle, Hambantota and Nuwara Eliya districts.

7th May: Up to 36mm of rainfall in Vavuniya, Anuradhapura, Matale, Colombo, Kalutara, Ratnapura and Nuwara Eliya districts; up to 8mm of rainfall in Mullaitivu, Mannar, Trincomalee, Polonnaruwa, Kandy, Puttalam, Kurunegala, Gampaha, Kegalla, Badulla and Monaragala districts; up to 3mm of rainfall in Kilinochchi, Batticaloa, Galle, Matara and Hambantota 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 suppress the rainfall in Sri Lanka for the upcoming 5 days and shall not have a significant impact on rainfall for the following 5 days. MJO shall enhance the rainfall for the next 5 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/>



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## Weekly Hydro- Meteorological Report for Sri Lanka

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

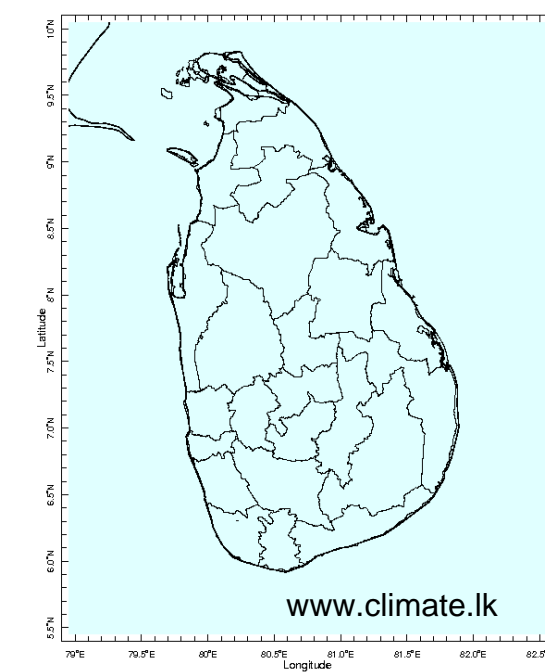
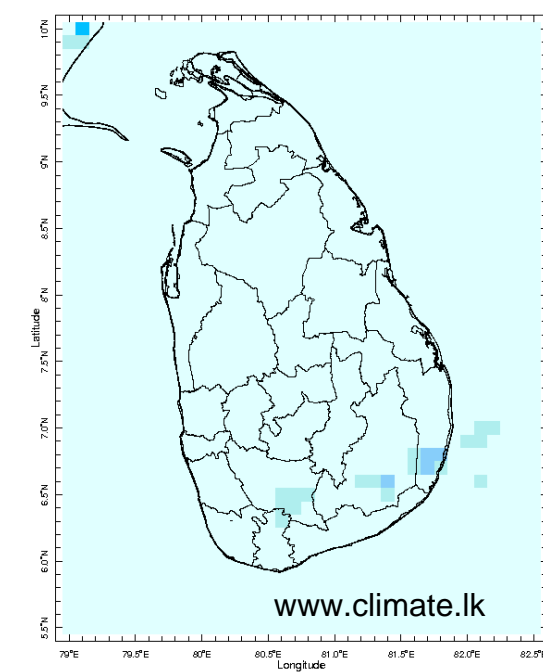
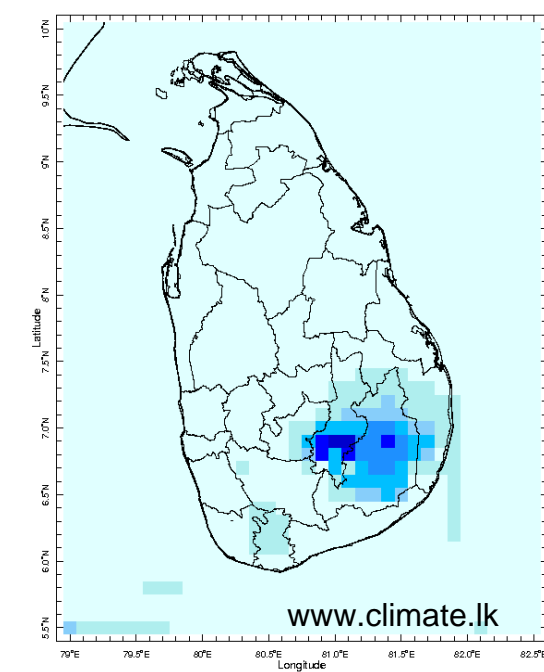
#### 2. Predictions

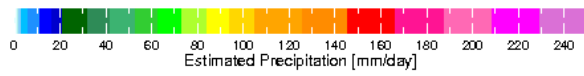
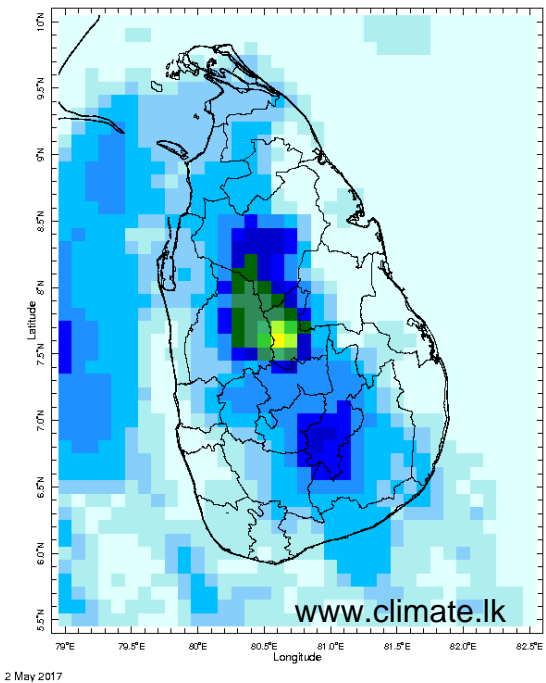
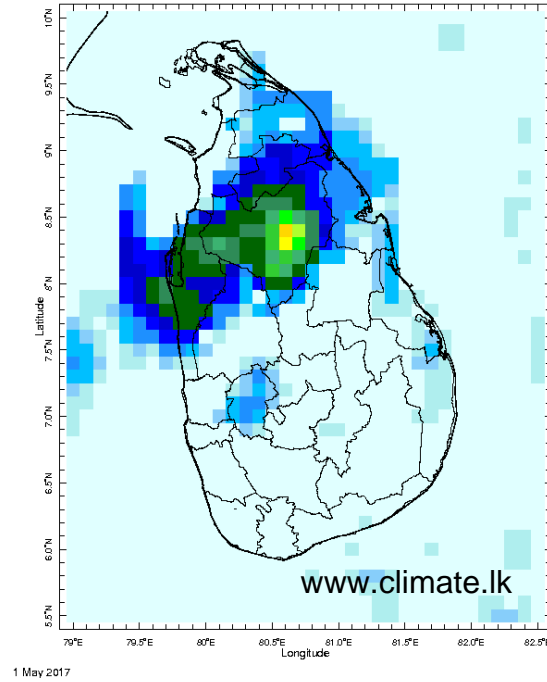
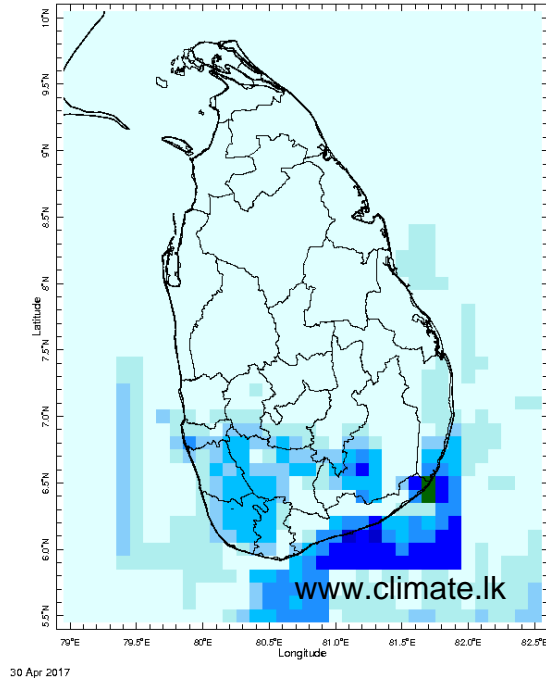
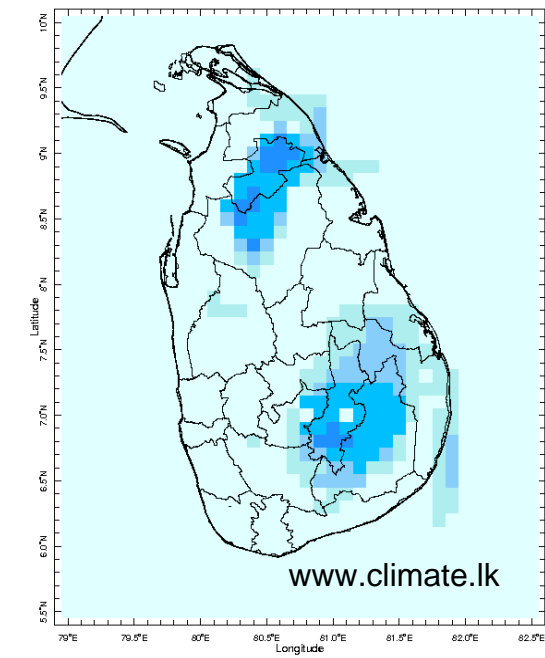
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

### MONITORING

#### Daily Rainfall Monitoring

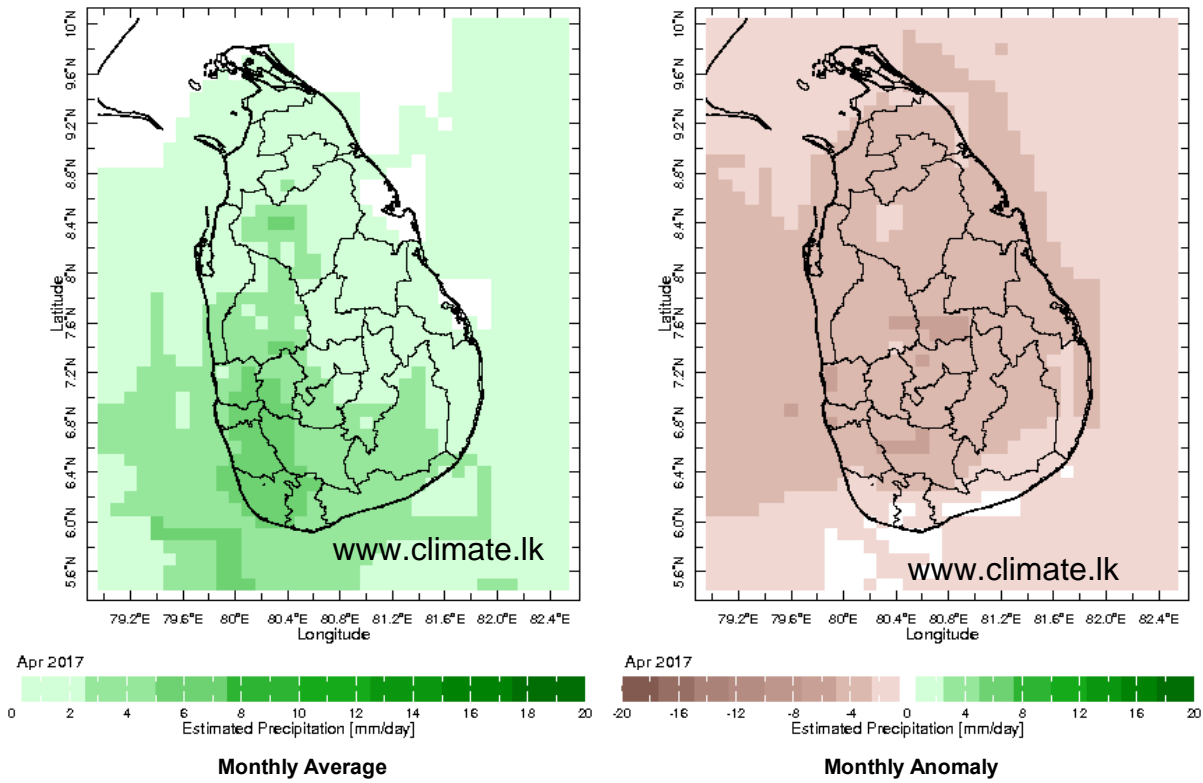
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



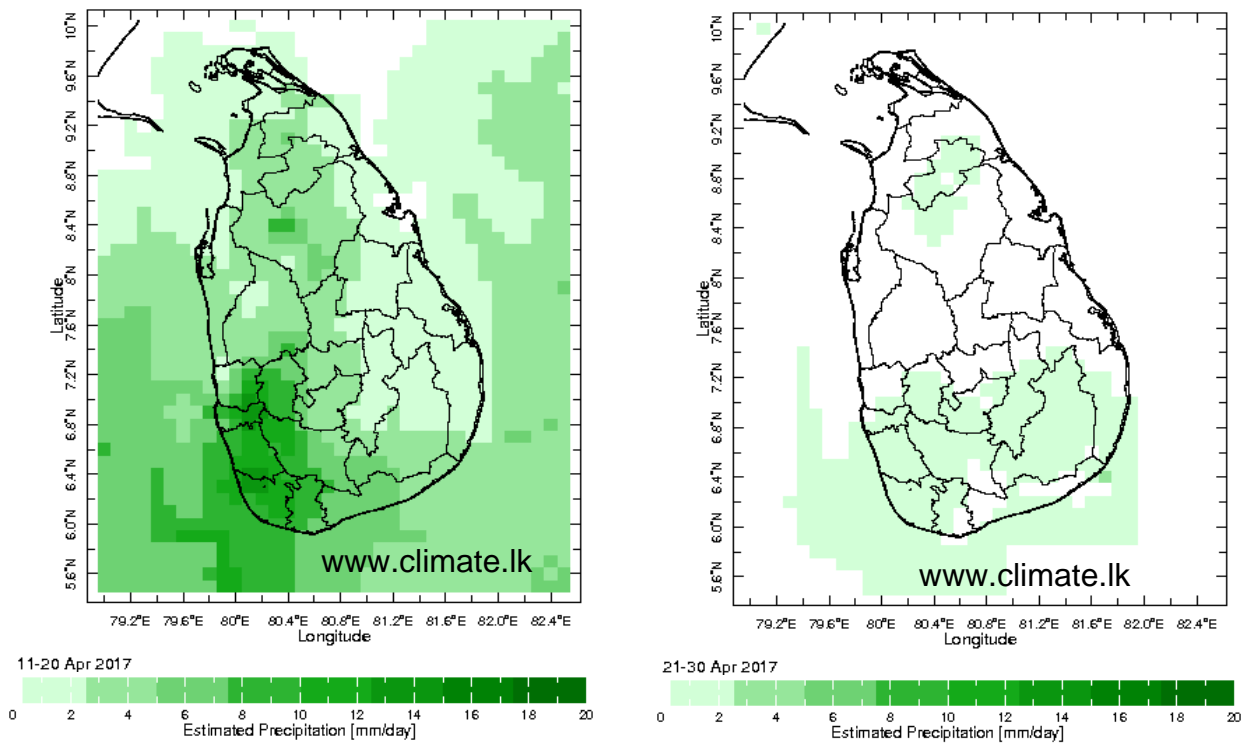


Monthly Rainfall Monitoring

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

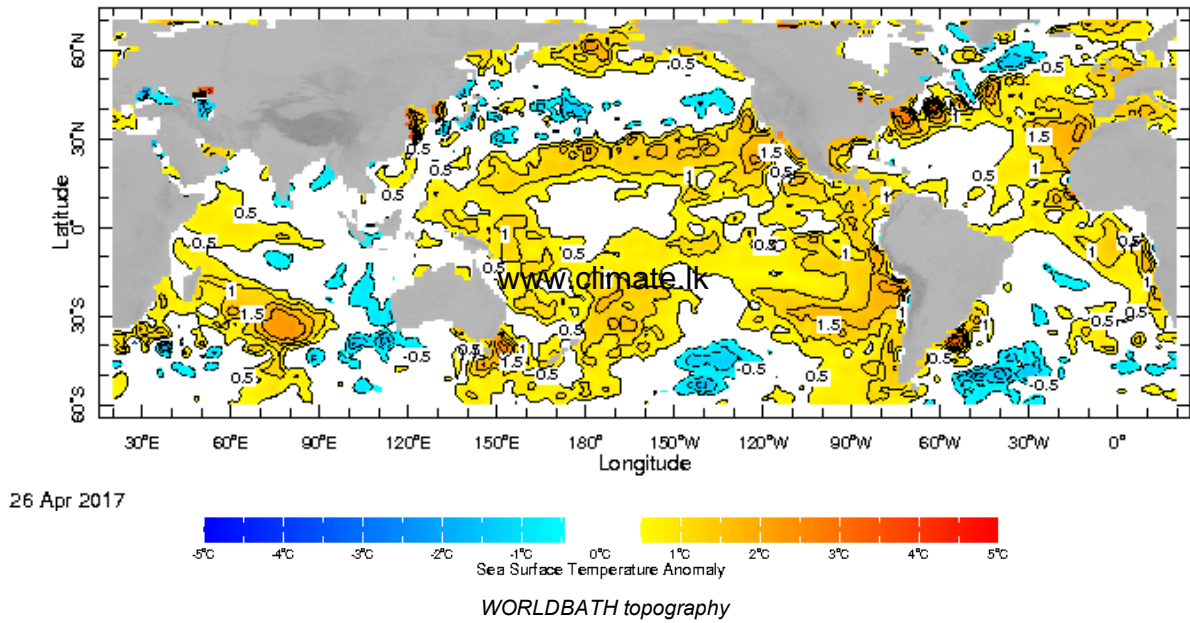


**Dekadal (10 Day) Satellite Derived Rainfall Estimates**

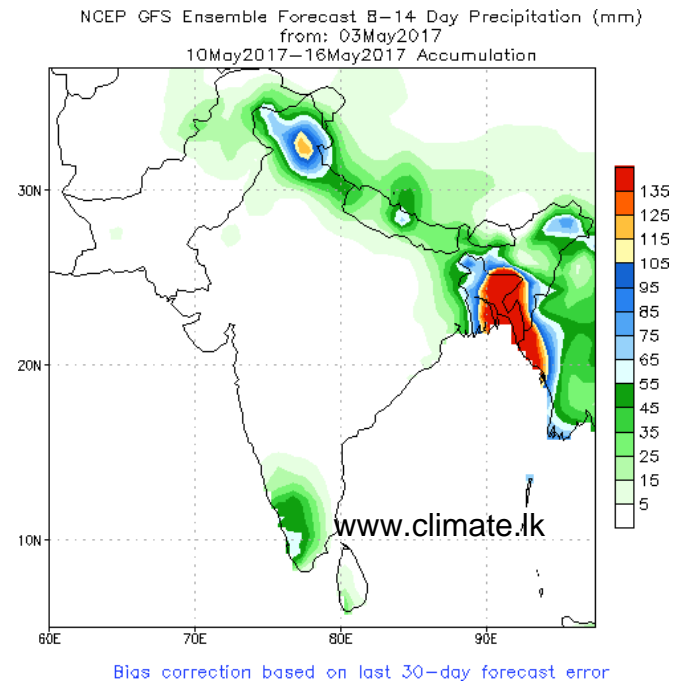
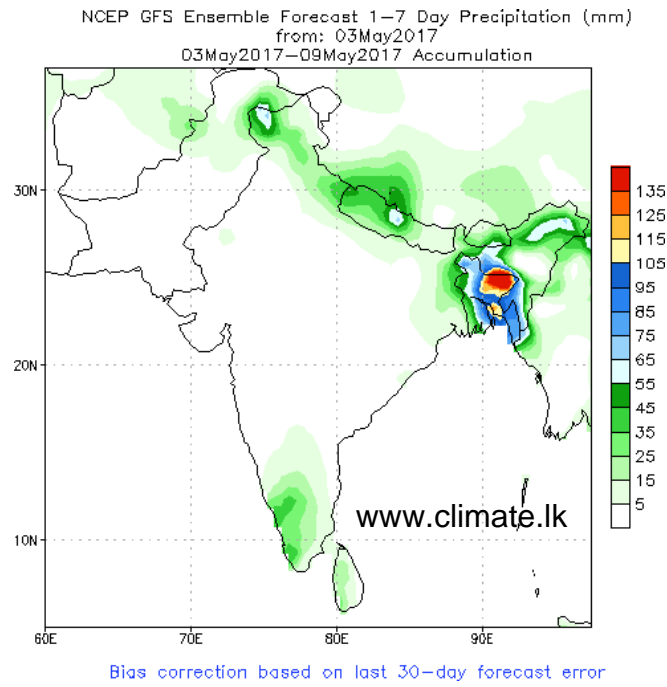


**Weekly Average SST Anomalies**

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

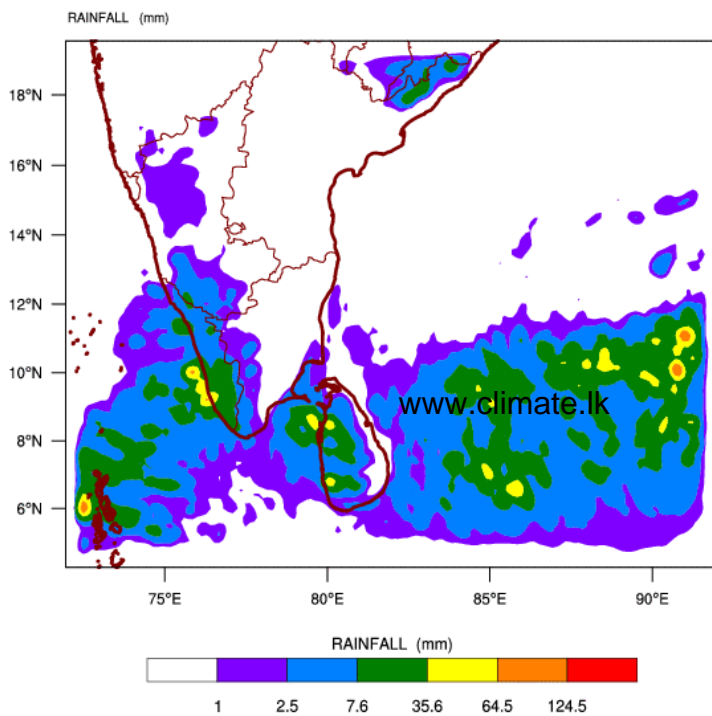


## NCEP GFS 1- 14 Day prediction

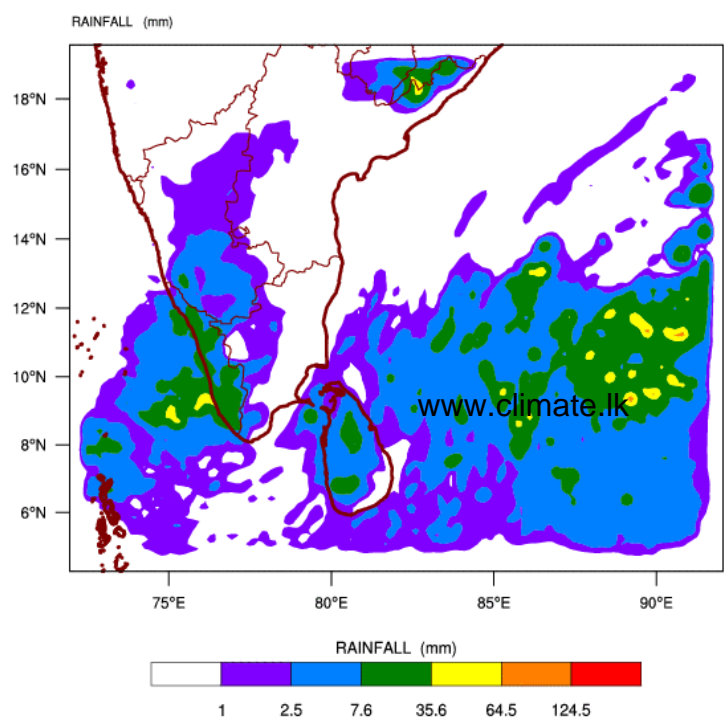


## WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 04-05-2017 valid for 03 UTC of 06-05-2017

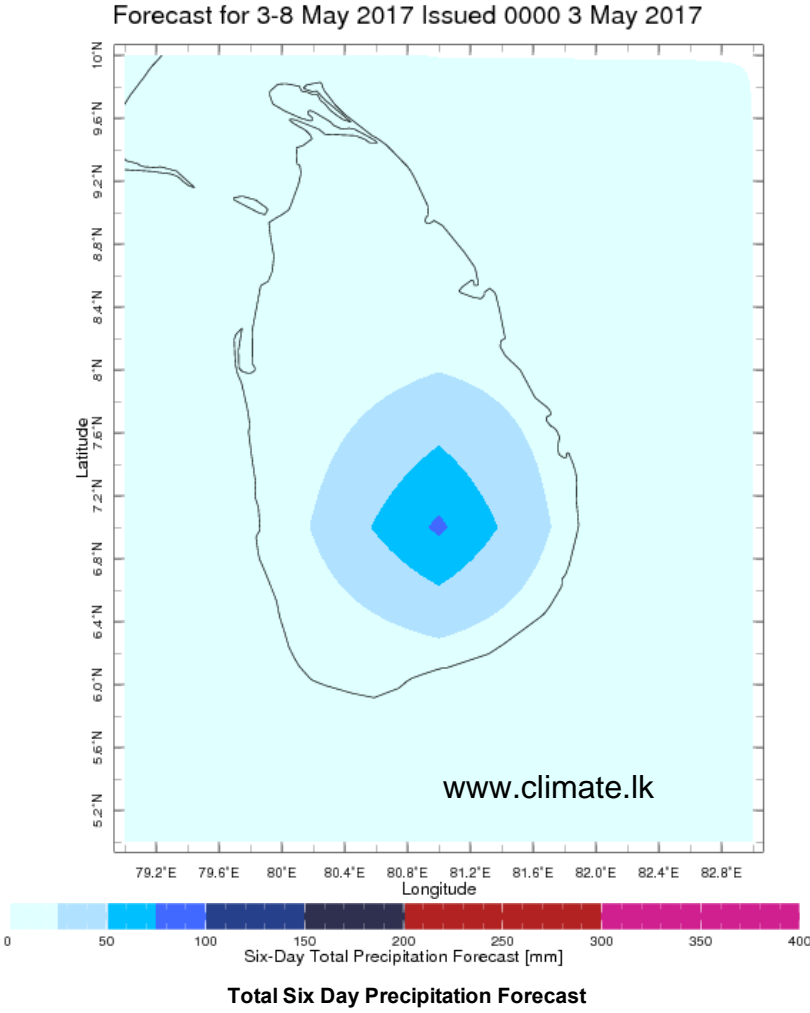
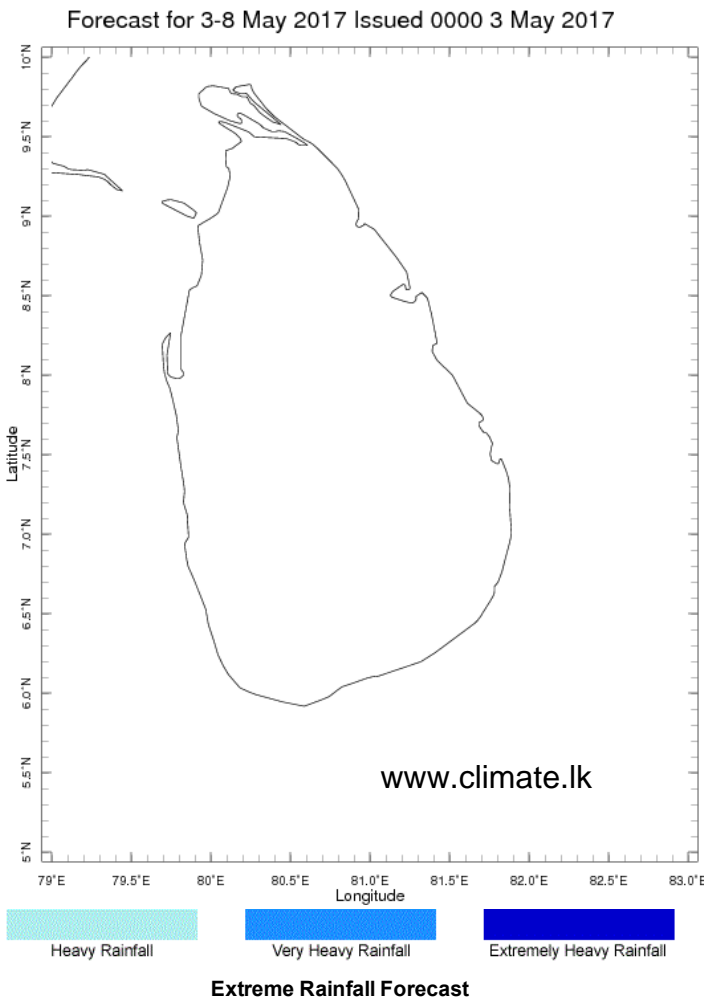


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 04-05-2017 valid for 03 UTC of 07-05-2017



Weekly Rainfall Forecast from IRI

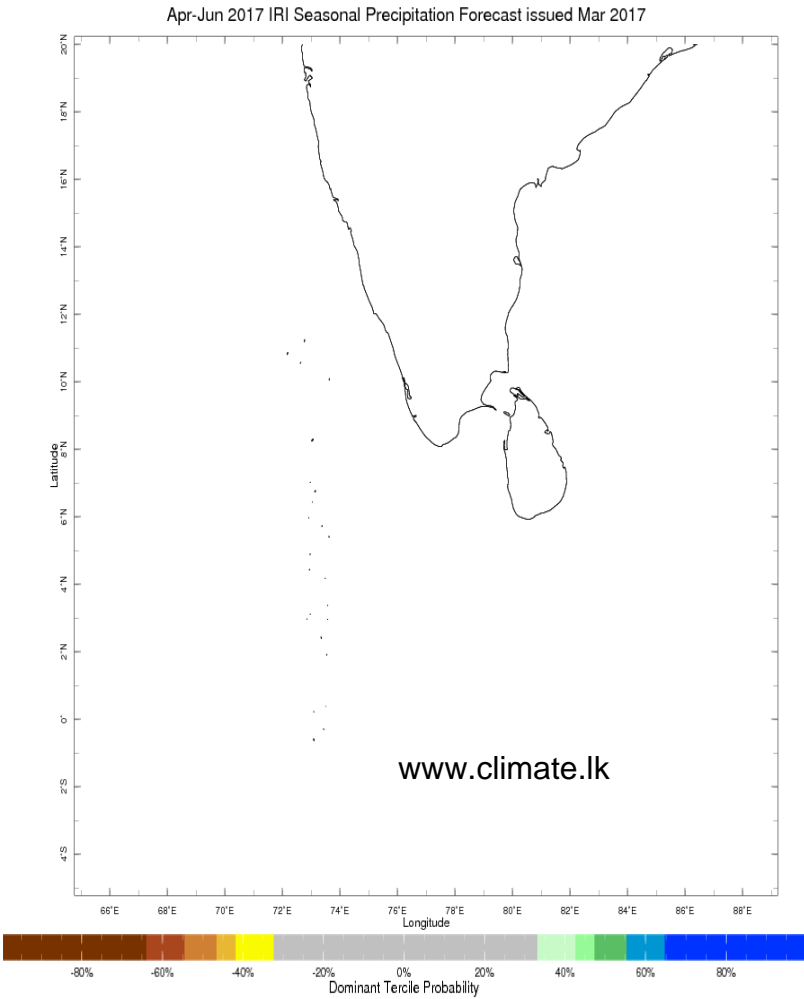
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.



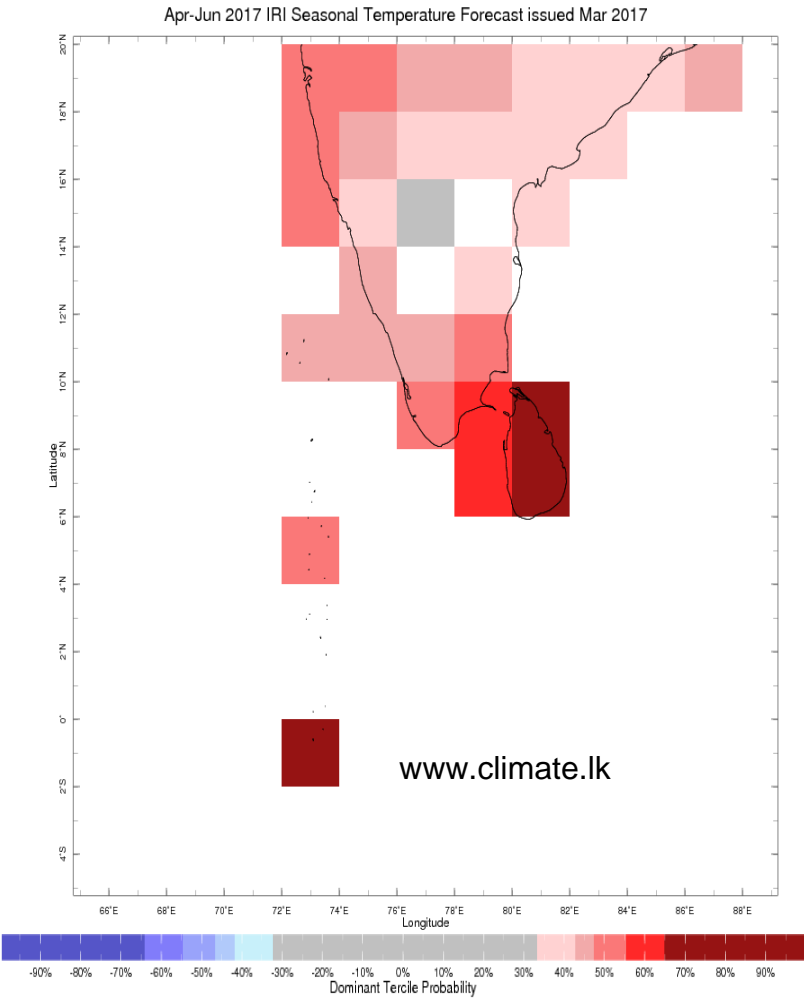


Seasonal Rainfall and Temperature Forecast

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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