

## 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>)

27 June 2019

### Highlights

- The IRI weekly rainfall forecast predicts up to 25 mm of total rainfall in the entire island during 25 – 30 Jun.
- Between 18 – 24 Jun: up to 20 mm of rainfall was recorded in Kurunegala, Ratnapura and Batticaloa districts on the 24<sup>th</sup>.
- From 19 – 25 Jun: CDAS Mean Vector Wind Total Not Available.
- 1 °C above average sea surface temperature was observed in the seas around Sri Lanka.

#### Monitoring

##### Rainfall

**Weekly Monitoring:** On June 18<sup>th</sup>, Monaragala and Ampara districts received up to 5 mm of rainfall. No significant rainfalls were recorded in any part of the island on the 19<sup>th</sup>. On June 20<sup>th</sup>, Ratnapura district received up to 5 mm of rainfall. On the 21<sup>st</sup>, Gampaha, Kegalle, Nuwara Eliya, Ratnapura, Matara, Galle, Kalutara and Colombo districts received up to 10 mm of rainfall; and Jaffna and Kilinochchi districts up to 5 mm. On the 22<sup>nd</sup>, Ratnapura, Nuwara Eliya, Monaragala and Ampara districts received up to 5 mm of rainfall. On the 23<sup>rd</sup>, Kurunegala, Batticaloa, Ratnapura and Kalutara districts received up to 20 mm of rainfall; and Polonnaruwa, Matale, Kandy, Badulla, Ampara, Monaragala, Nuwara Eliya, Kegalle, Gampaha, Colombo, Galle and Matara districts up to 15 mm.

**Total Rainfall for the Past Week:** The RFE 2.0 tool shows total up to 10-25 mm in Batticaloa, Ampara, Kegalle, Ratnapura, Nuwara Eliya, Gampaha, Colombo, Kalutara, Galle, Matara and Kurunegala districts; and 5-10 mm in Polonnaruwa, Puttalam, Matale, Kandy, Badulla and Monaragala. Below average rainfall up to 25-50 mm is shown for Puttalam, Kurunegala, Gampaha, Colombo, Kegalle, Ratnapura, Kandy and Nuwara Eliya districts; and up to 10-25 mm in Anuradhapura, Polonnaruwa, Matale, Ampara, Badulla, Monaragala, Galle, Matara and Hambantota districts.

**Monthly Monitoring:** During May – Below average rainfall conditions up to 240 mm were experienced by Nuwara Eliya, Kegalle, Colombo, Kalutara, Gampaha, Kurunegala and Ratnapura districts; and up to 180 mm in rest of the island. The CPC Unified Precipitation Analysis tool shows up to 150 mm of total rainfall in Colombo, Kalutara and Galle districts; up to 100 mm in Gampaha, Kegalle, Ratnapura, Matara, Badulla, Monaragala and Galle districts; up to 75 mm in Trincomalee, Polonnaruwa, Nuwara Eliya, Ampara and Hambantota districts; and up to 50 mm in Vavuniya, Anuradhapura, Puttalam, Kurunegala, Matale and Kandy districts.

#### Ocean State (Text Courtesy IRI)

##### Pacific sea state: June 19, 2019

SSTs in the tropical Pacific maintained a weak El Niño level during May and early June, and temperature anomalies of subsurface waters were slightly above average. Some patterns in the atmosphere show intermittent El Niño conditions. Collective model forecasts show a continuation of at least weak El Niño-level SSTs lasting through 2019. The official CPC/IRI outlook, with an El Niño advisory, calls for a 66% chance of El Niño continuing during Jun-Aug, decreasing to 50-55% for continuing through fall and winter.

##### Indian Ocean State

1 °C above average sea surface temperature was observed in the seas around Sri Lanka.

## Predictions

### Rainfall

#### 14-day prediction:

##### NOAA NCEP models:

From 26<sup>th</sup> Jun -2<sup>nd</sup> Jul: Total rainfall up to 35 mm Puttalam, Kurunegala, Gampaha, Kegalle, Colombo and Ratnapura districts; up to 15-25 mm in Galle district; and up to 5-15 mm in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Mannar, Anuradhapura, Matale, Kandy and Nuwara Eliya districts.

From 3<sup>rd</sup> - 9<sup>th</sup> Jul: Total rainfall up to 35 mm in Puttalam, Gampaha and Ratnapura districts; and up to 15-25 mm Kurunegala, Kegalle, Galle and Matara districts.

##### IMD NCMWRF Forecast:

27<sup>th</sup> Jun: Not Available

28<sup>th</sup> Jun: Not Available

##### IRI Model Forecast:

From 26<sup>th</sup> Jun 1<sup>st</sup> Jul: Total rainfall up to 25 mm is expected in most parts 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/>

### 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

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

#### 2. Predictions

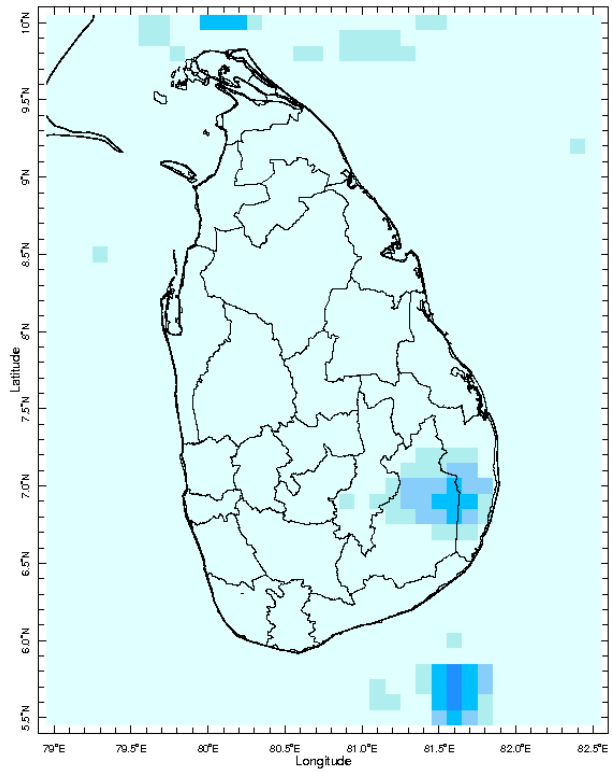
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

## MONITORING

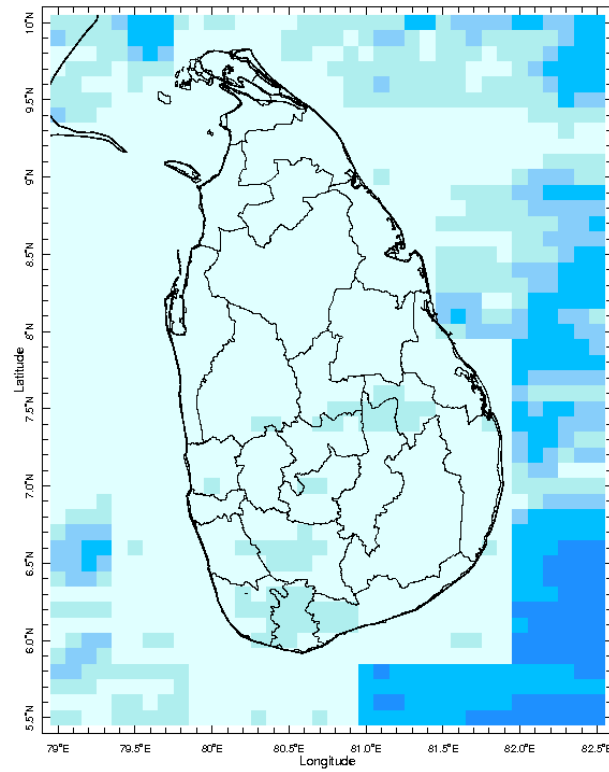
### Daily Rainfall Monitoring

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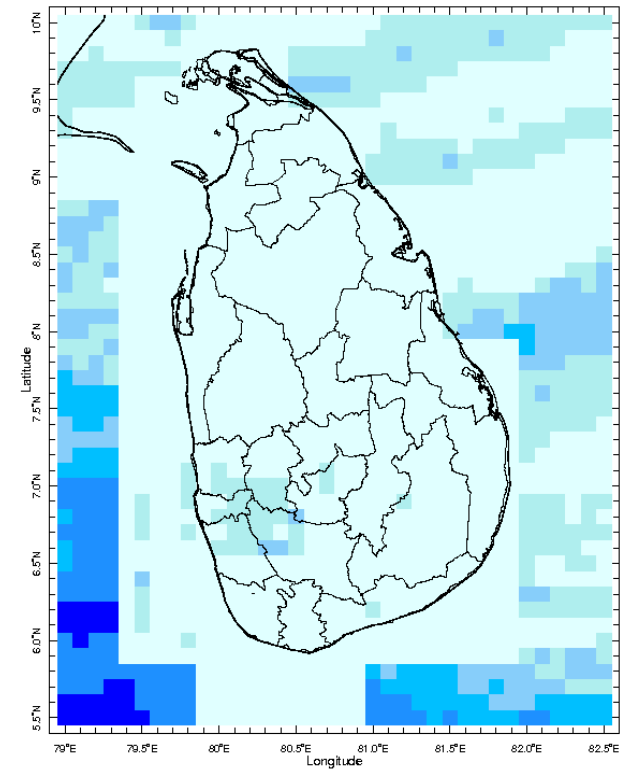
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



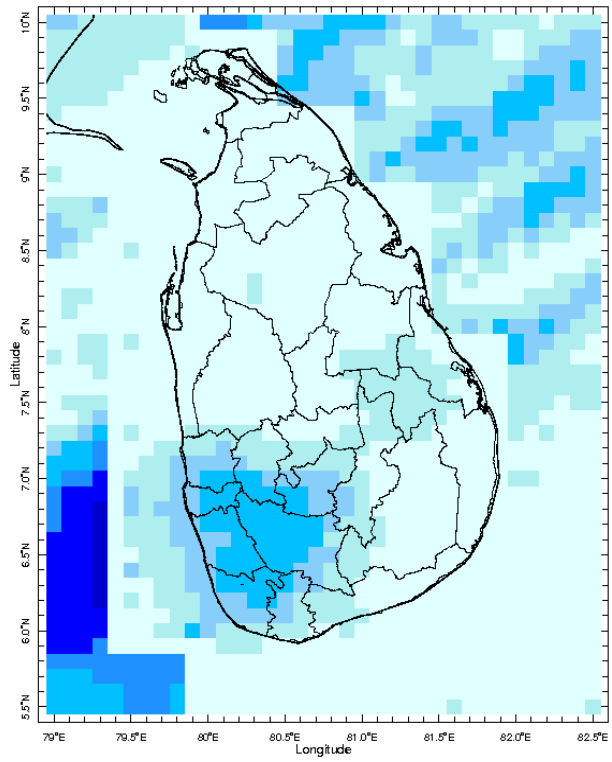
18 Jun 2019



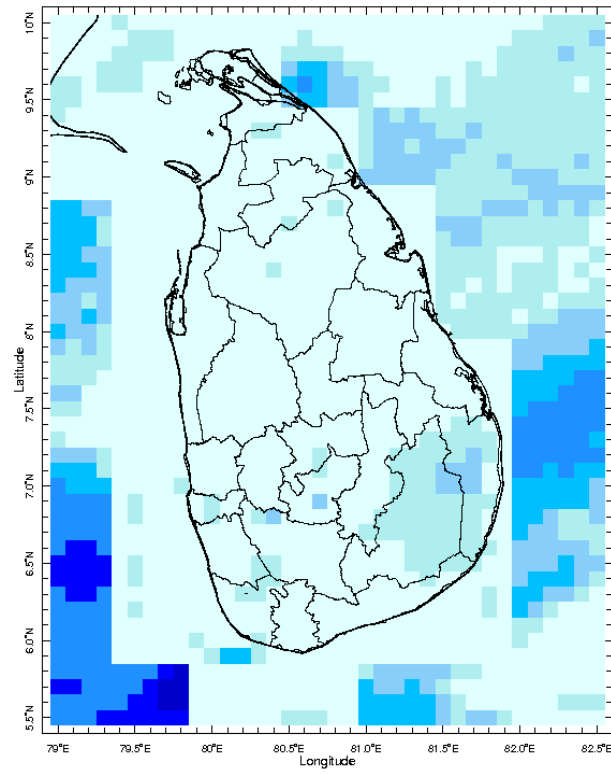
19 Jun 2019



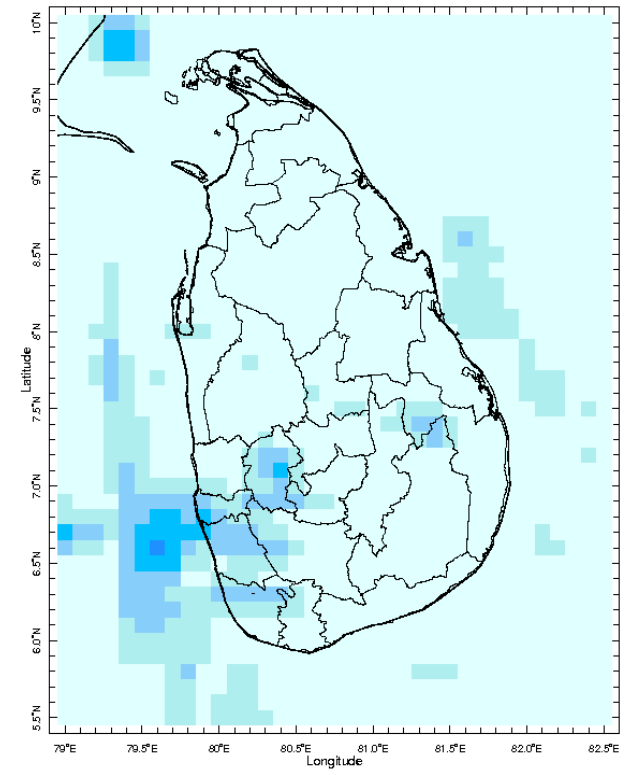
20 Jun 2019



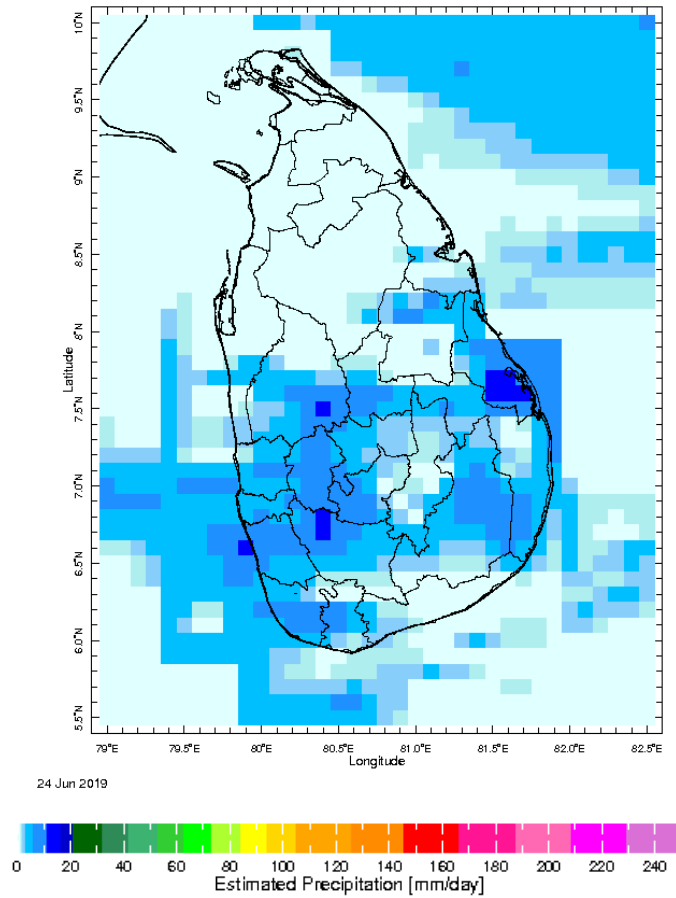
21 Jun 2019



22 Jun 2019

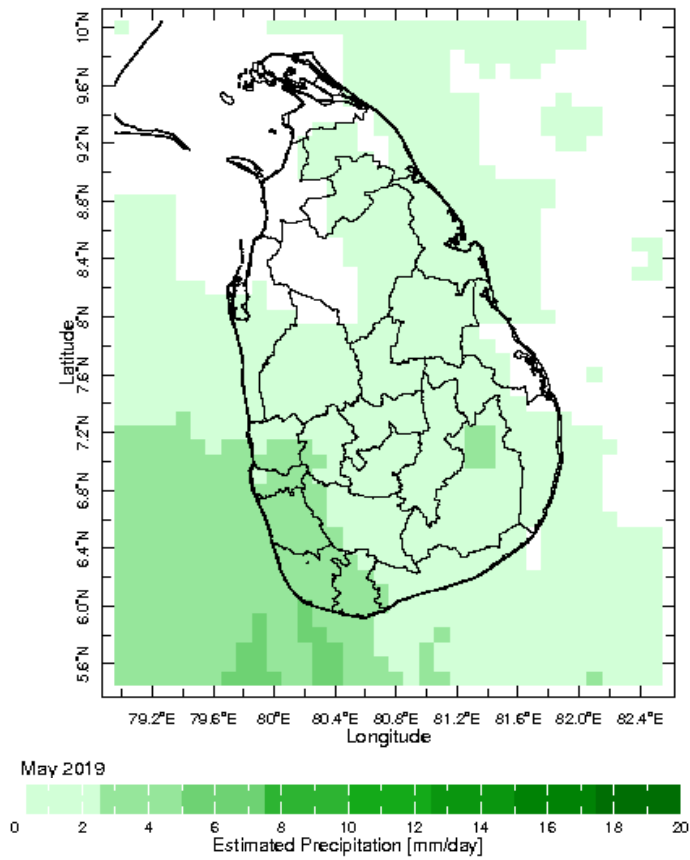


23 Jun 2019

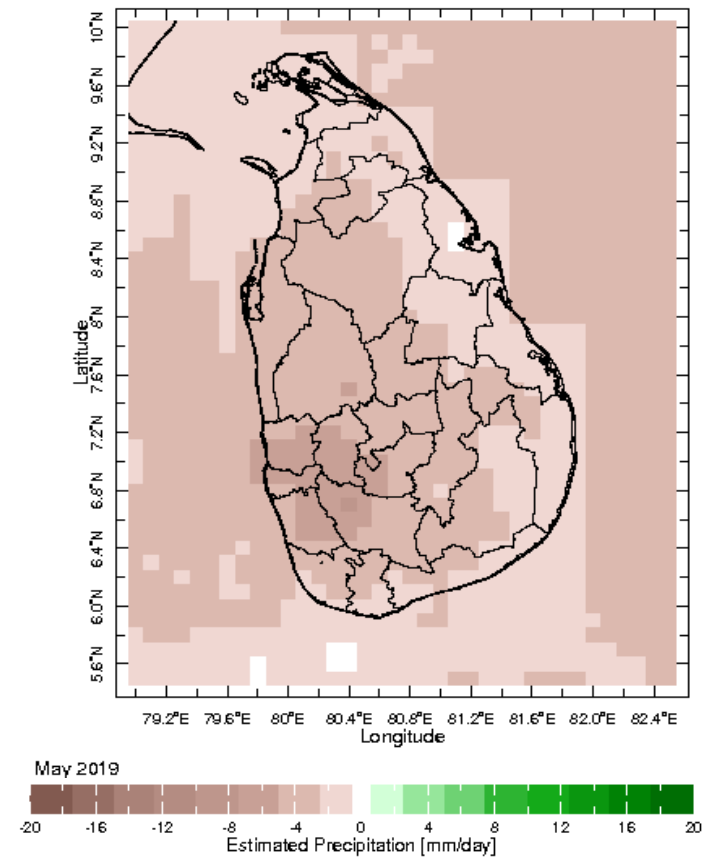


## Monthly Rainfall Monitoring

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

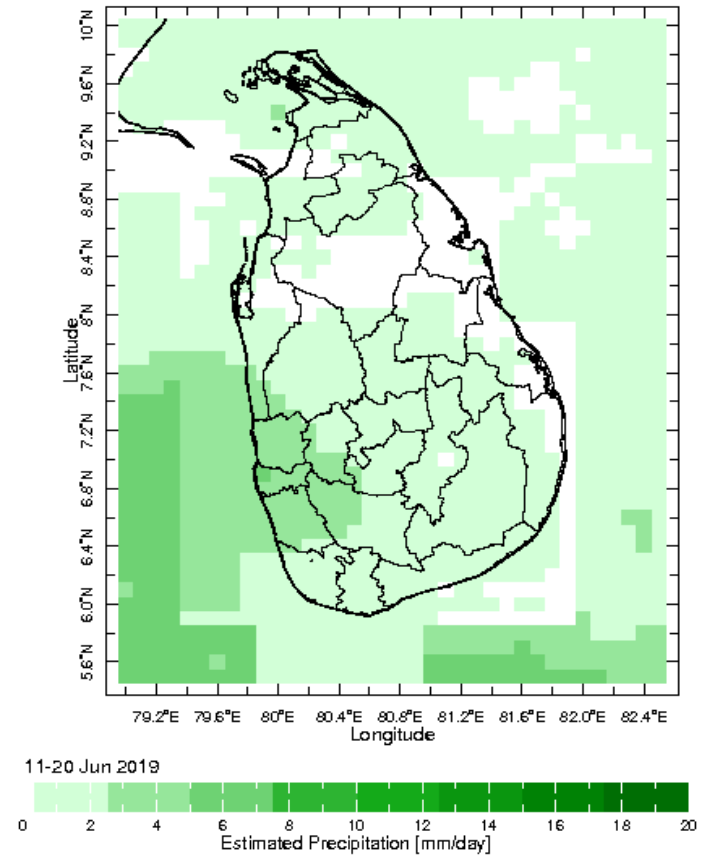
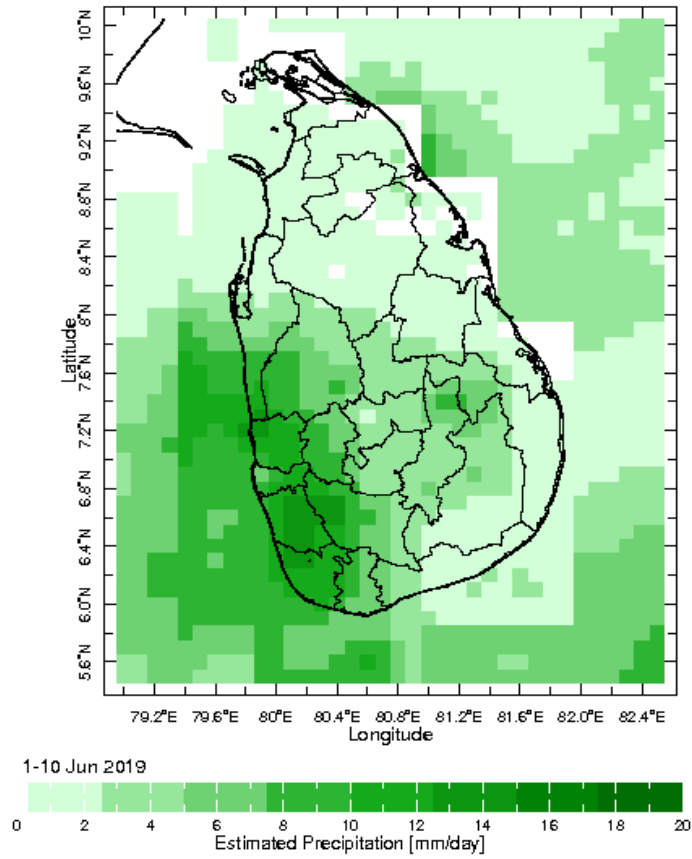


**Monthly Average**



**Monthly Anomaly**

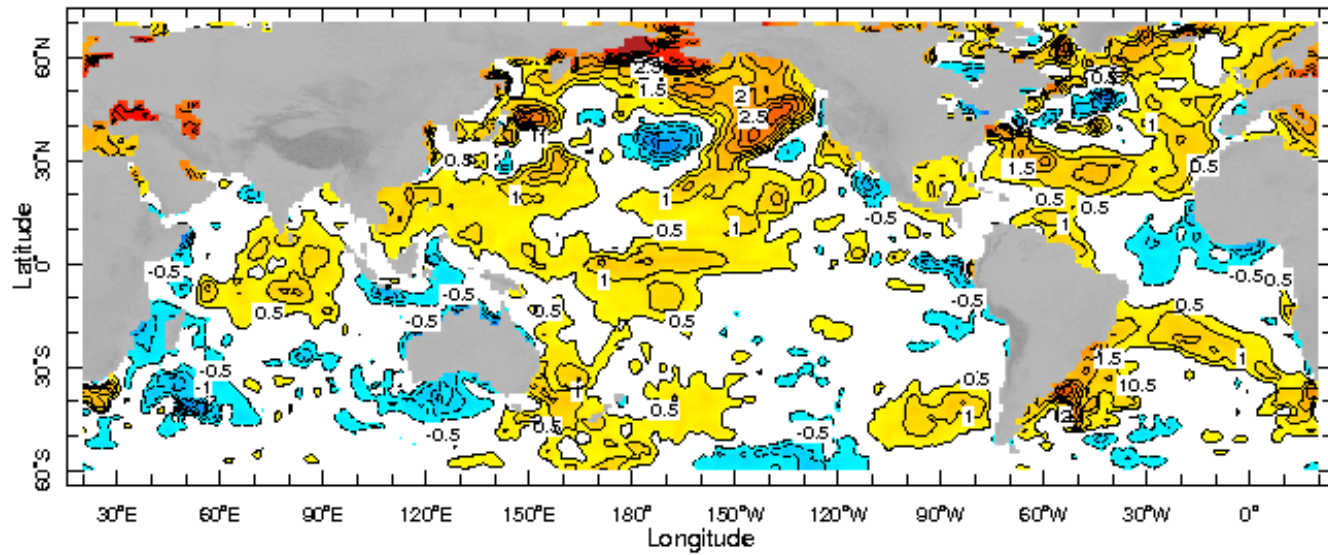
**Dekadal (10 Day) Satellite Derived Rainfall Estimates**



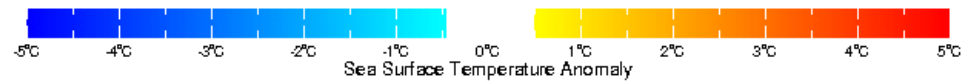
## Weekly Average SST Anomalies

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





19 Jun 2019

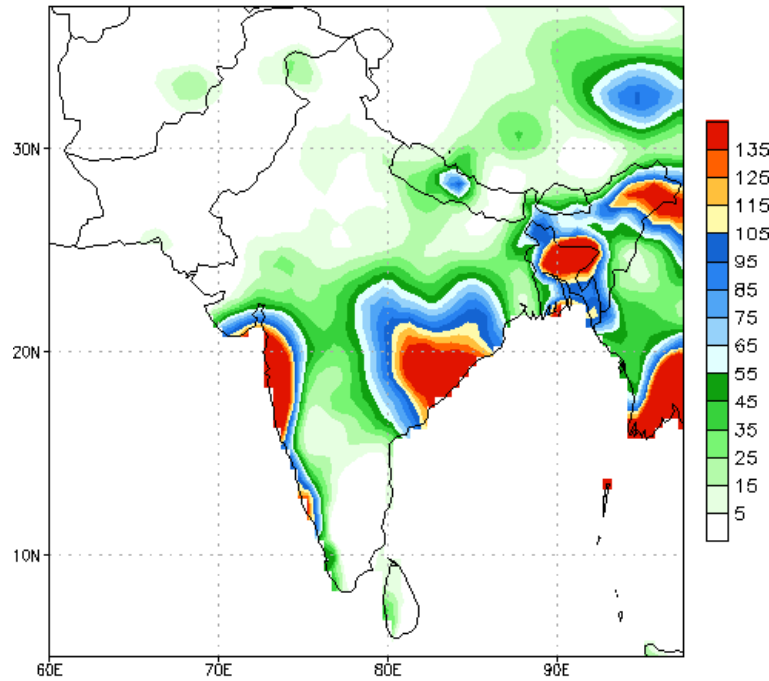


*WORLDBATH topography*

## PREDICTIONS

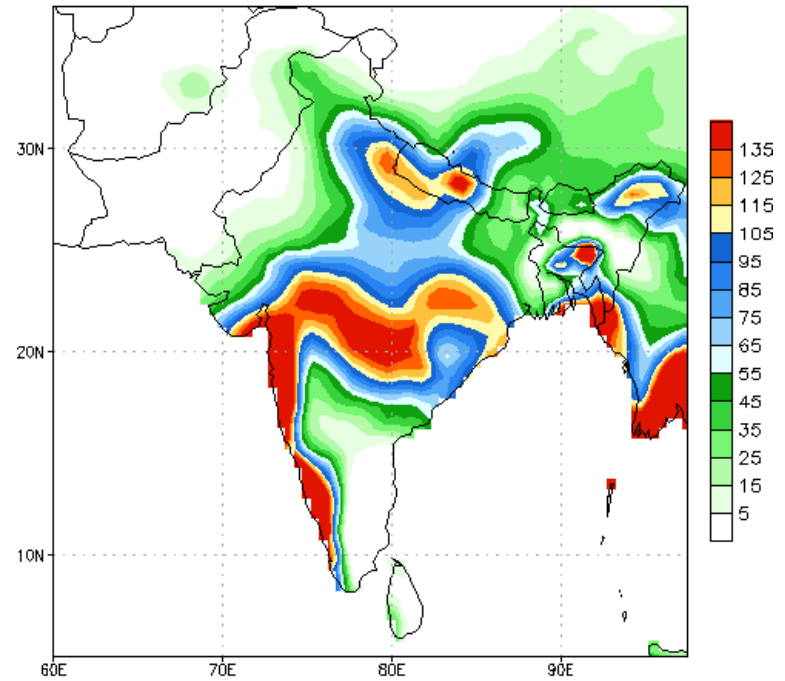
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 26Jun2019  
26Jun2019-02Jul2019 Accumulation



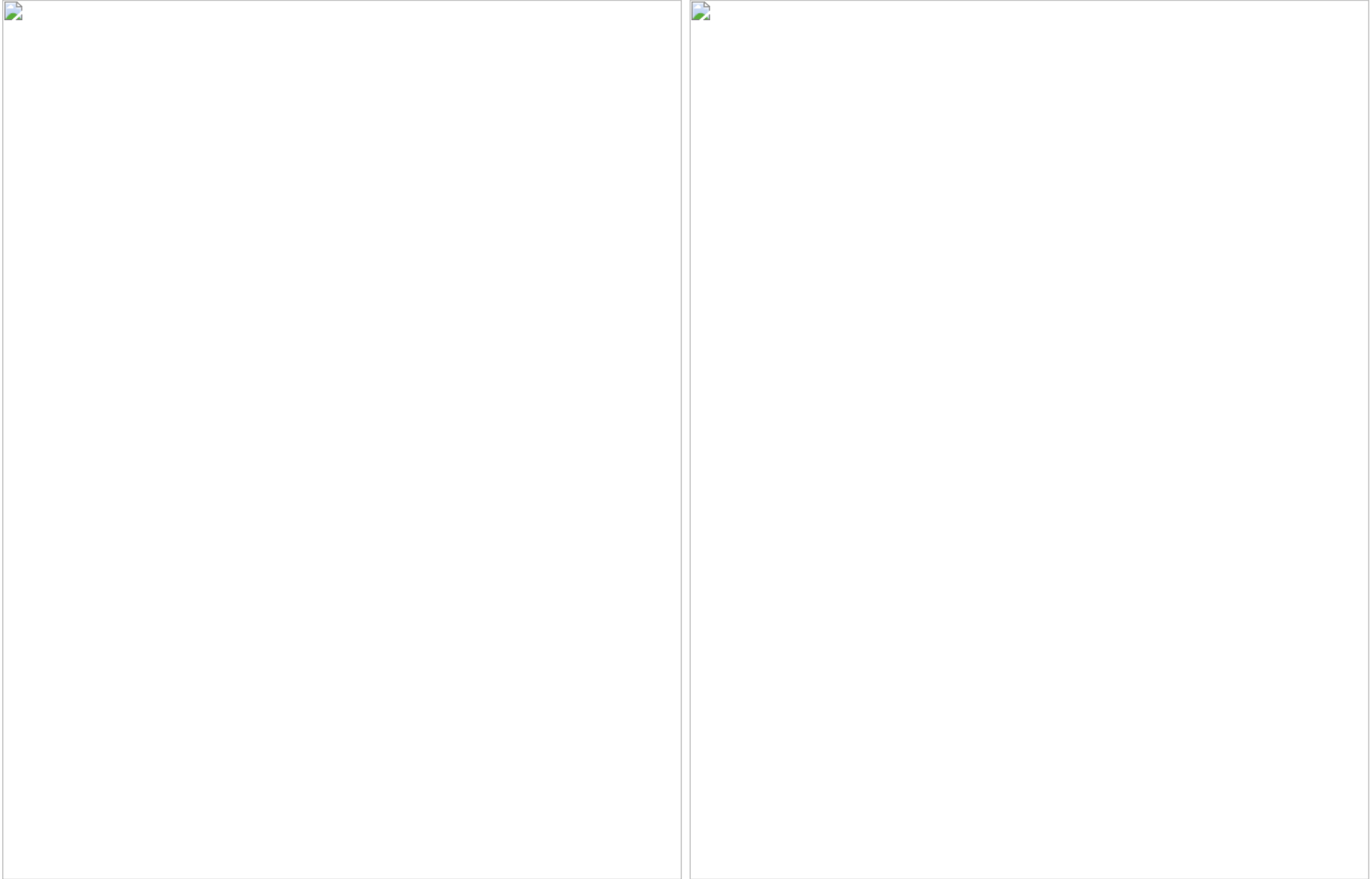
Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 26Jun2019  
03Jul2019-09Jul2019 Accumulation



Bias correction based on last 30-day forecast error

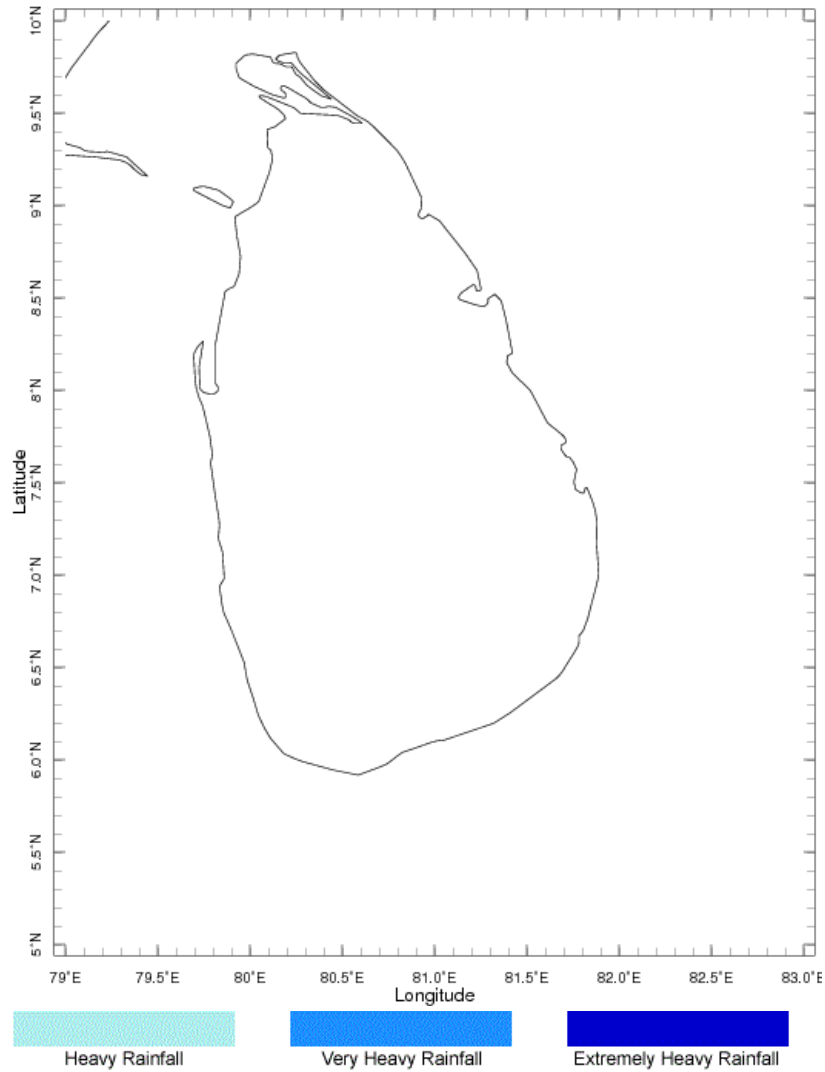
## WRF Model Forecast (from IMD Chennai)



Weekly Rainfall Forecast from IRI

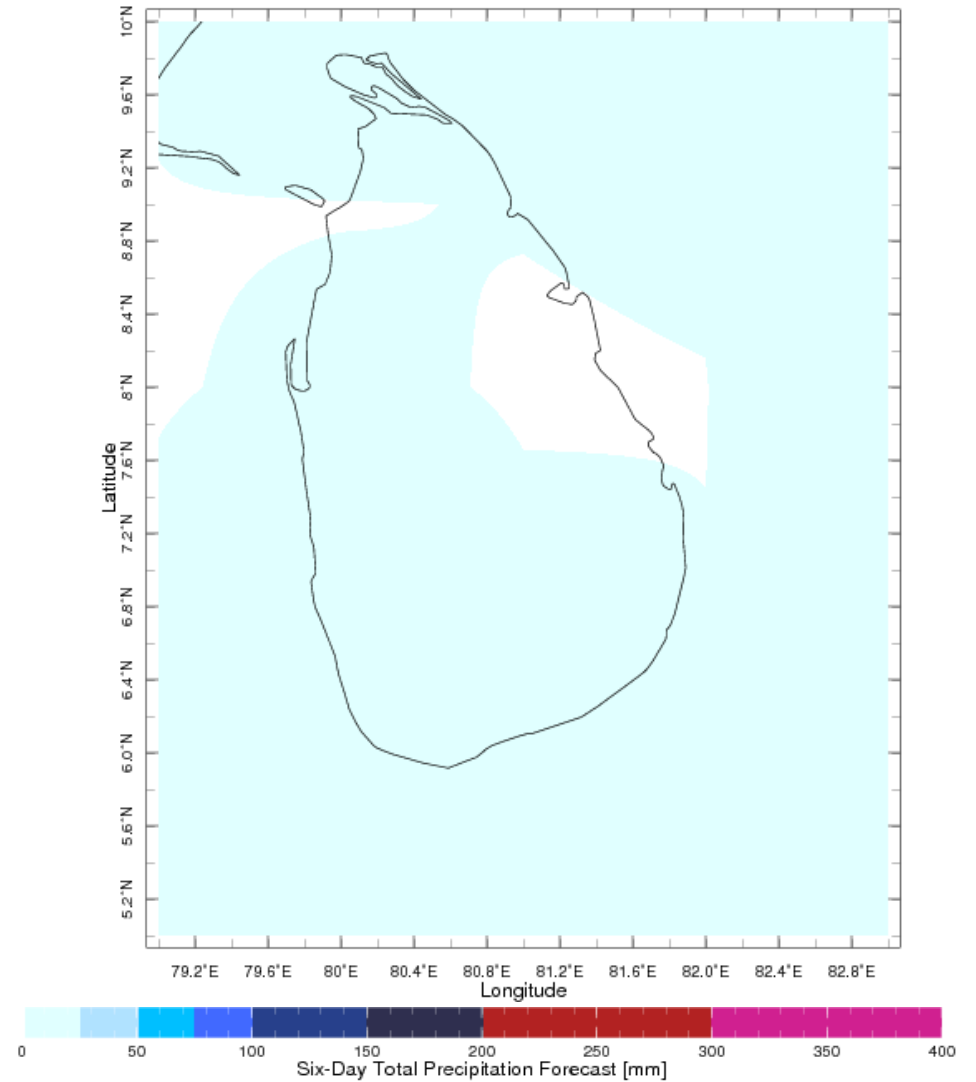
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 26 Jun 2019 - 1 Jul 2019 Issued 0000 26 Jun 2019



Extreme Rainfall Forecast

Forecast for 26 Jun 2019 - 1 Jul 2019 Issued 0000 26 Jun 2019



Total Six Day Precipitation Forecast