

Experimental Climate Monitoring and Prediction

by: Ruchira Lokuhetti, Chalani Malge, Janan Visvanathan,
Lareef Zubair and Michael Bell¹ (FECT and IRI¹)

4 October 2017

Highlights

- The IRI weekly rainfall forecast predicts up to 75 mm of total rainfall in Badulla district during 2nd – 7th Oct.
- Between 25 Sep - 1 Oct: Rainfall up to 40 mm was recorded in Colombo, Kalutara and Ratnapura districts on the 27th.
- From 24 - 30 Sep: minimum temperature of 20 °C was recorded from Nuwara Eliya district while eastern coastal regions recorded a maximum temperature between 35-40 °C.
- From 25 Sep - 1 Oct: up to 36 km/h, northwesterly winds were experienced by the southern and central parts of the country and up to 28 km/h in the northern regions.
- 0.5 °C above average sea surface temperature was observed in the northern seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On the 25th Kalutara, Galle, Matara and Ratnapura districts up to 30 mm; and many parts of the island up to 10 mm. On the 26th Kalutara and Galle districts received up to 40 mm of rainfall; Jaffna, Kilinochchi, Gampaha, Colombo and Ratnapura districts up to 20 mm; and many parts of the island up to 10 mm. On September 27th, Colombo, Kalutara, and Ratnapura districts received up to 40 mm of rainfall; Kegalla and Gampaha districts up to 30 mm; and Kandy, Nuwara Eliya and Galle districts up to 20 mm. On the 28th several regions of Kurunegala and Puttalam districts received up to 10 mm of rainfall. No significant rainfalls were recorded in any part of the island on the 29th and 30th. On October 1st northern regions of Badulla district received up to 20 mm of rainfall.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 50-75 mm in Colombo district; up to 25-50 mm Gampaha, Kegalla, Kalutara, Galle and Ratnapura; and up to 10-25 mm Puttalam, Kurunegala, Kandy, Matale, Badulla, Ampara and Nuwara Eliya districts. It shows above average rainfall up to 10-25 mm in Colombo district. It also shows below average rainfall up to 25-50 mm in Mannar, Vavuniya, Anuradhapura, Puttalam, Kurunegala, Matale, Kandy, Nuwara Eliya, Badulla, Monaragala, Galle and Matara districts; and up to 10-25 mm in many parts of the island.

Monthly Monitoring: During September - below average rainfall conditions were experienced in the eastern and southern regions of the island and above average rainfall in western and northern regions. Mullaitivu, Trincomalee, Polonnaruwa, Batticaloa, Matale, Ampara, Badulla, Nuwara Eliya, Ratnapura, , Monaragala, Galle, Matara and Hambantota districts received up to 150 mm below average rainfall. Colombo district received up to 180 mm of above average rainfall; and Puttalam, Kurunegala, Colombo, Kegalla and Kalutara districts up to 150 mm. The CPC Unified Precipitation Analysis tool shows ~300 mm of total rainfall in Gampaha, Colombo and Kalutara districts; up to ~200 mm in Kegalla, Ratnapura and Galle districts; up to 100 mm in Puttalam, Kurunegala, Matale. Ampara, Monaragala, Badulla, Kandy and Matara districts; and up to 50 mm in many parts of the island.

Ocean State (Text Courtesy IRI)

Pacific sea state: September 19, 2017

In mid-September 2017, the tropical Pacific remained in an ENSO-neutral state, although SSTs in the east-central tropical Pacific have cooled to the threshold for La Niña while the atmosphere continues to maintain largely ENSO-neutral patterns. The collection of latest ENSO prediction models indicates coolish ENSO-neutral or weak La Niña as two possible scenarios during Northern Hemisphere fall and winter. The official CPC/IRI outlook slightly favors La Niña development, and carries a La Niña watch.

Indian Ocean State

0.5 °C above average sea surface temperature was observed in the northern seas around Sri Lanka.

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 2nd Oct – 08th Oct: Total rainfall between 45-55 mm in Colombo, Gampaha, Ratnapura, Kegalle and Galle districts; and between 35-45 mm in Kurunegala district; between 25-35 mm in Puttalam and Matara districts.

From 09th – 15th Oct : Total rainfall between 65-75 mm in Colombo, Gampaha, Kalutara and Galle districts; between 45-55 mm in Puttalam, Kurunegala, Ratnapura and Matara districts ; between 35-45 mm in Hambantota district; between 25-35 mm in Anuradhapura, Matale, Kandy and Nuwara Eliya; between 15-25 mm in Mannar, Vavuniya, Polonnaruwa, Badulla, Monaragala, and Ampara districts; and up to 15 mm rainfall in Jaffna, Kilinochchi, Mullaitivu, Trincomalee and Batticaloa districts.

IMD WRF Forecast:

06th Oct: Up to 64.5 mm of rainfall in Puttalam, Colombo, Kalutara, Galle and Ratnapura districts; up to 35.6 mm in Anuradhapura, Kurunegala, Gampaha, Kegalle, Nuwara Eliya, Matara and Hambantota districts; up to 7.6 mm rainfall in Mannar, Mullaitivu, Vavuniya, Trincomalee, Polonnaruwa, Matale, Kandy and Moneragala districts; and up to 2.5 mm rainfall in Batticaloa and Ampara districts.

07th Sep: Up to 35.6 mm of rainfall in Mannar, Puttalam, Gampaha, Colombo, Kalutara, Ratnapura, Galle and Matara districts; up to 7.6 mm rainfall in Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Kurunegala, Kegalla and Hambantota districts; and up to 2.5 mm rainfall in Batticaloa, Ampara, Moneragala, Matale and Kandy districts.

IRI Model Forecast:

2nd – 7th Oct: Total rainfall up to 75 mm in Badulla district; Up to 50 mm total rainfall in Trincomalee, Polonnaruwa, Batticaloa, Ampara, Moneragala, Matale, Kandy, Nuwara Eliya, Kegalla, Ratanapura, Colombo, Kalutara, Galle and Matara districts and up to 25 mm for rest of the island.

MJO based OLR predictions

For the next 15 days:

MJO shall suppress the rainfall in Sri Lanka.

¹ 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

Inside This Issue

1. Monitoring

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

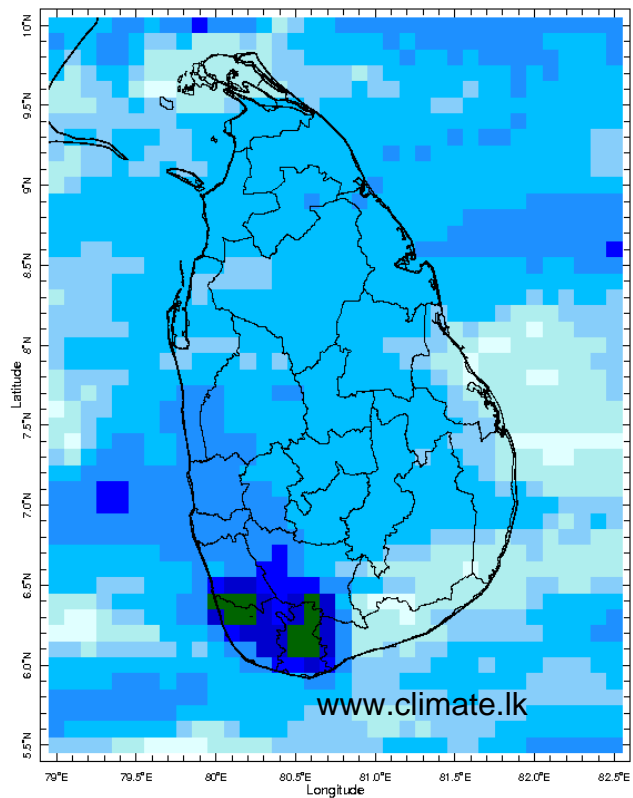
2. Predictions

- 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

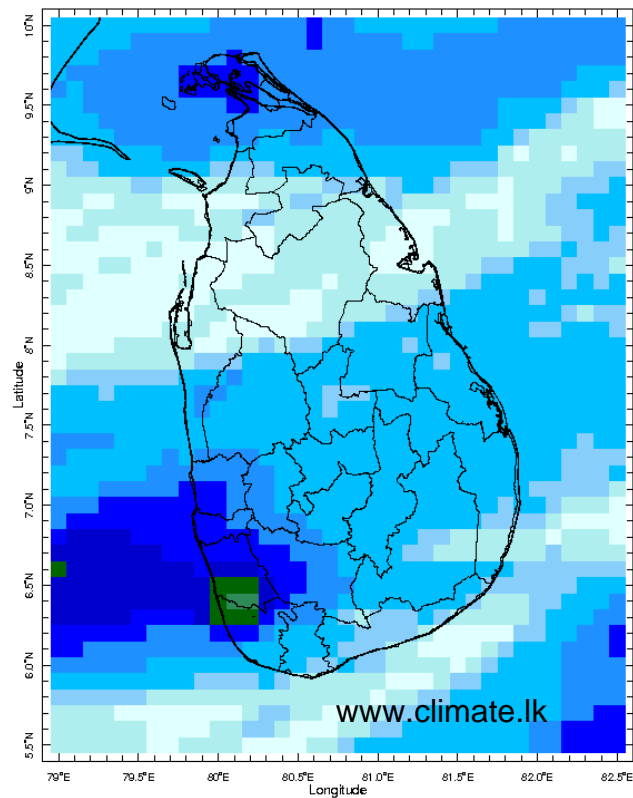
MONITORING

Daily Rainfall Monitoring

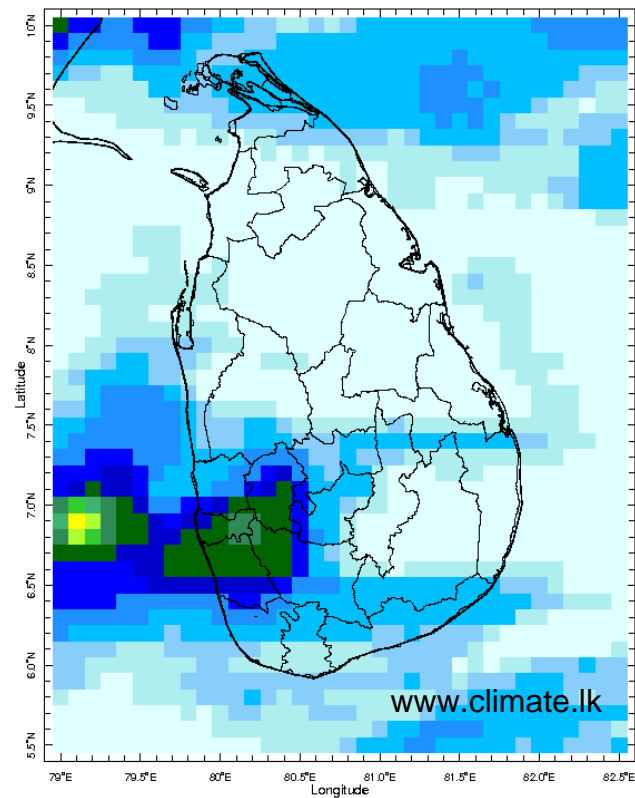
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



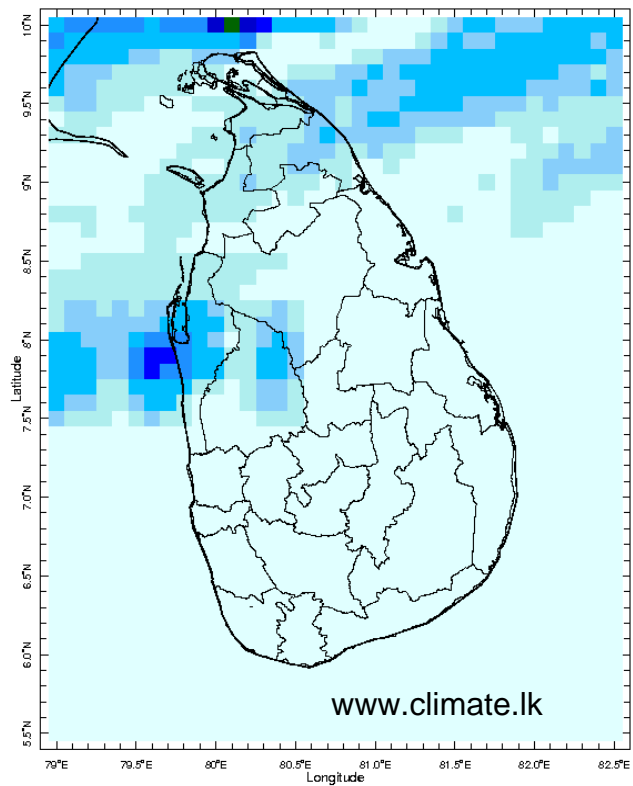
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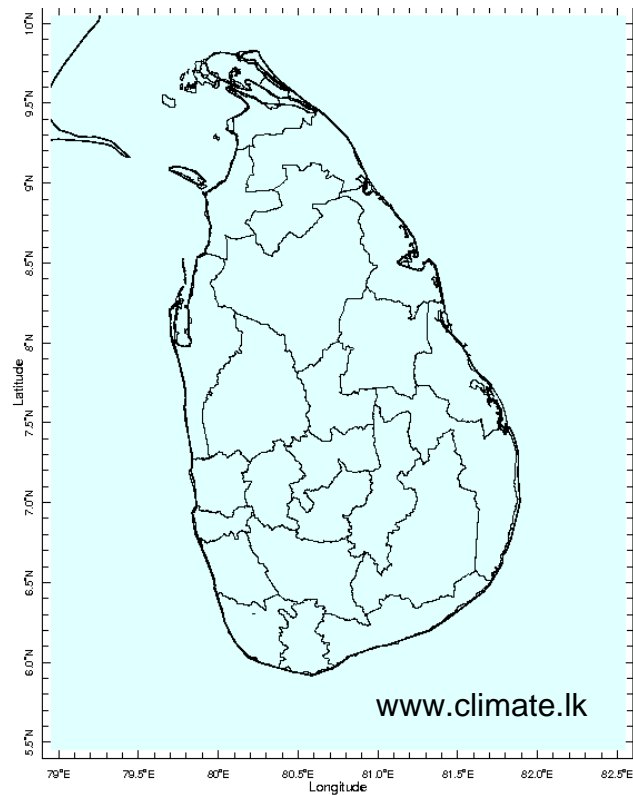
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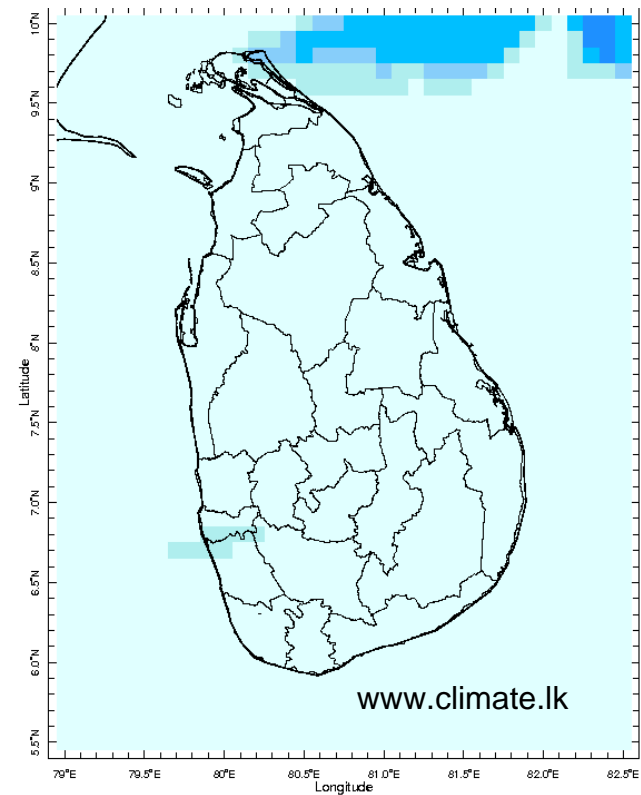
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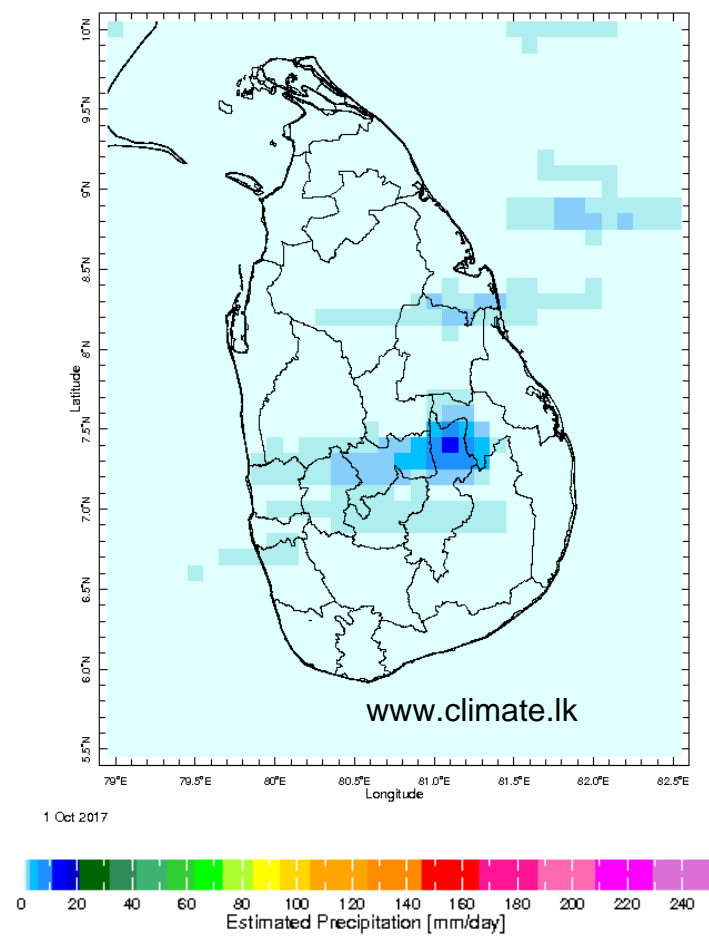
28 Sep 2017



29 Sep 2017

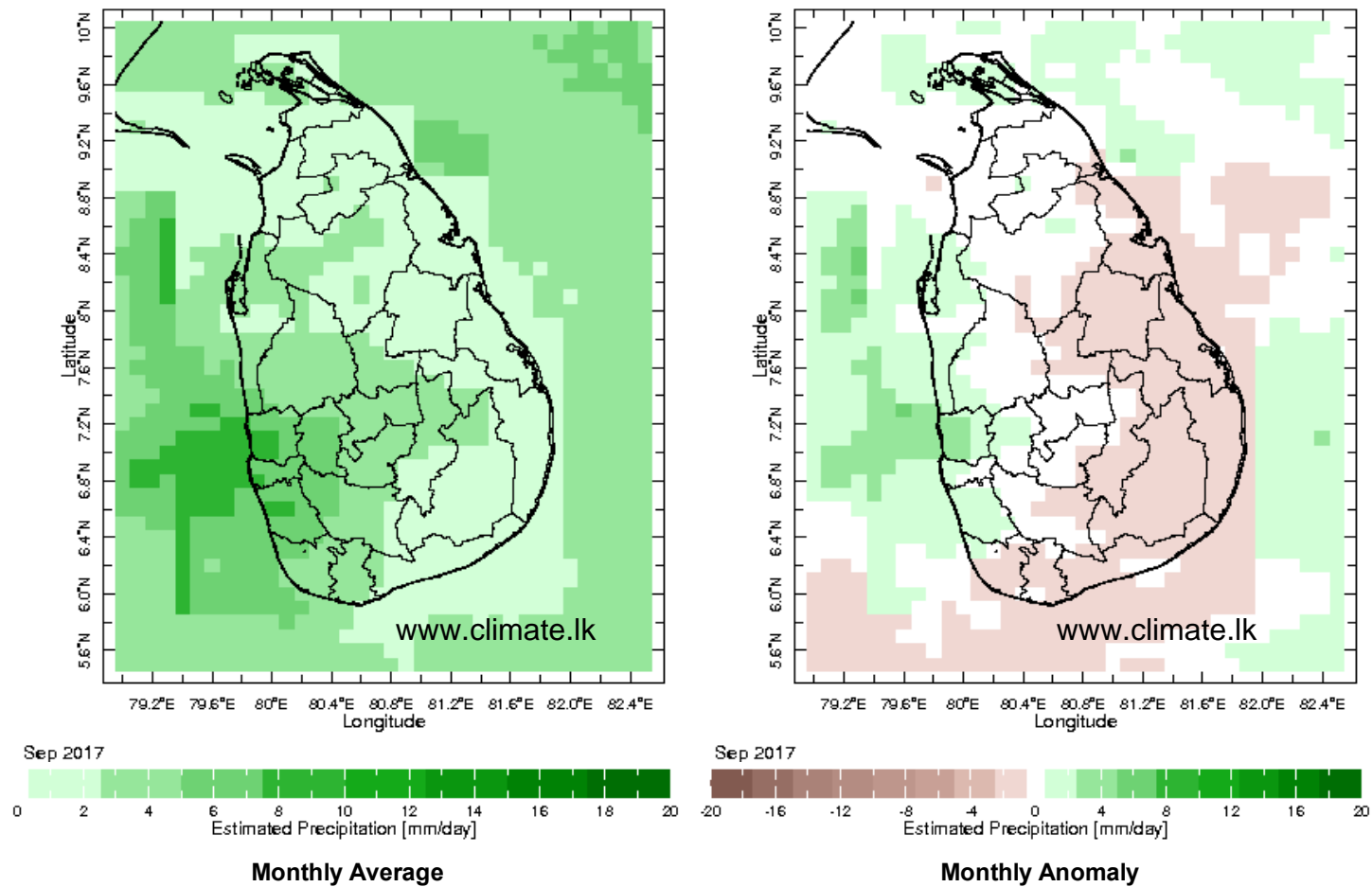


30 Sep 2017

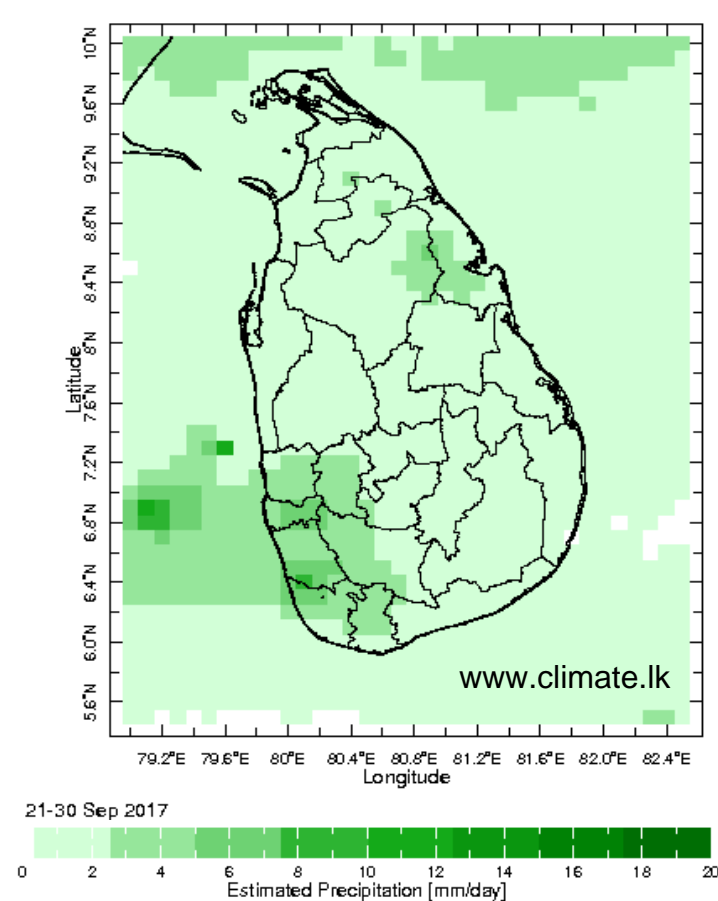
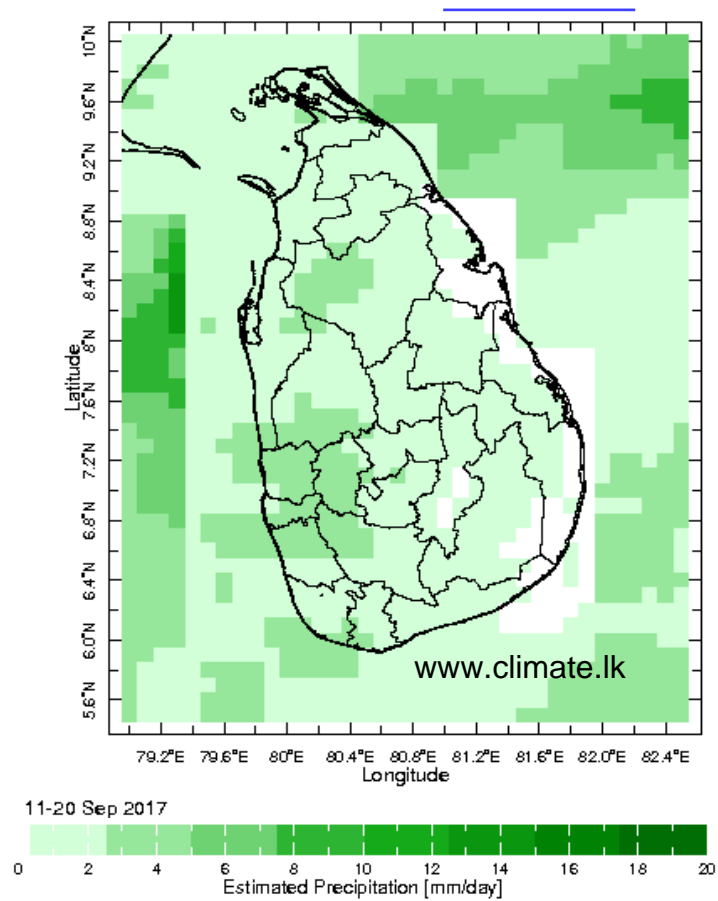


Monthly Rainfall Monitoring

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

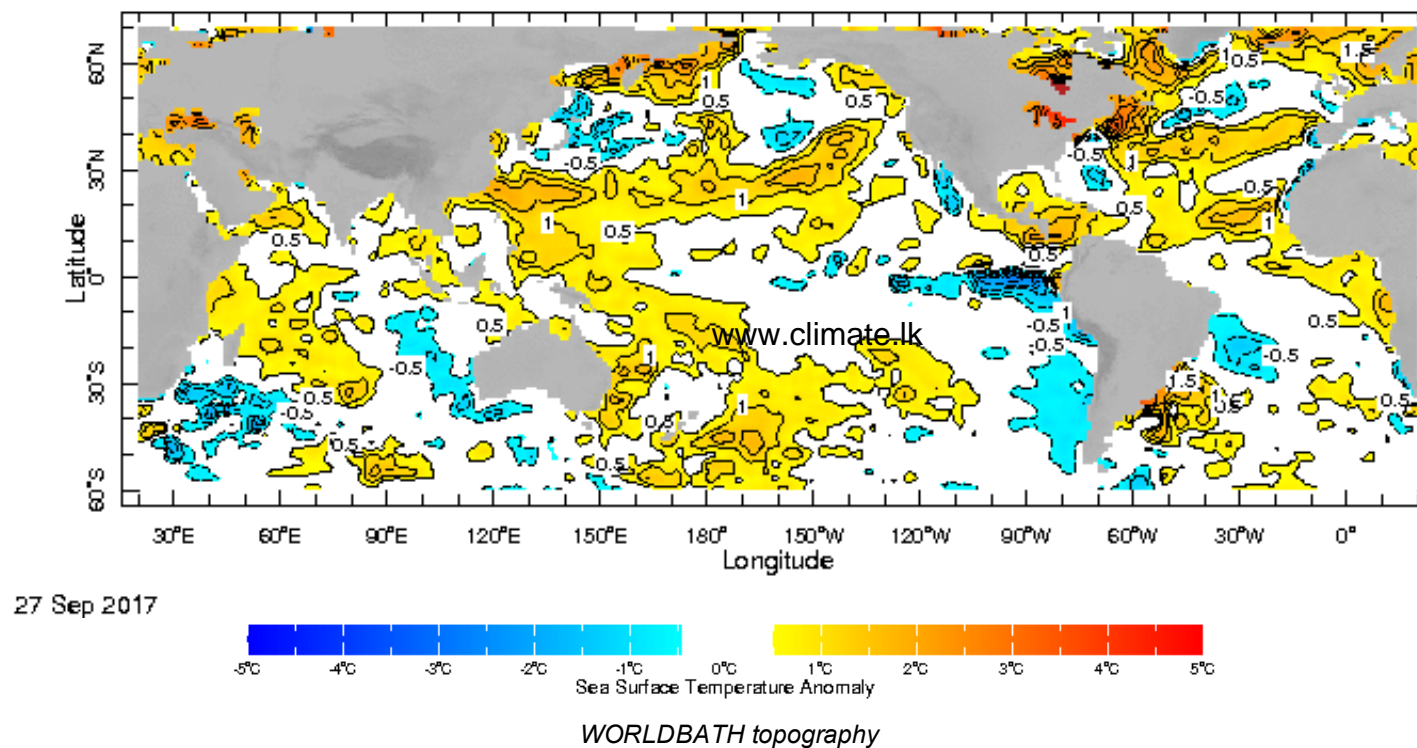


Dekadal (10 Day) Satellite Derived Rainfall Estimates



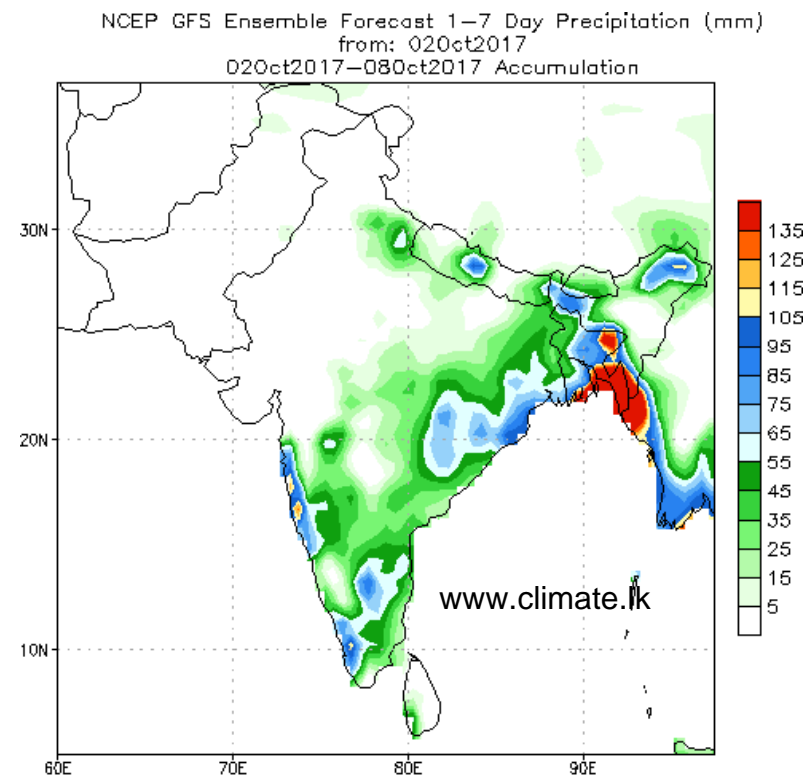
Weekly Average SST Anomalies

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

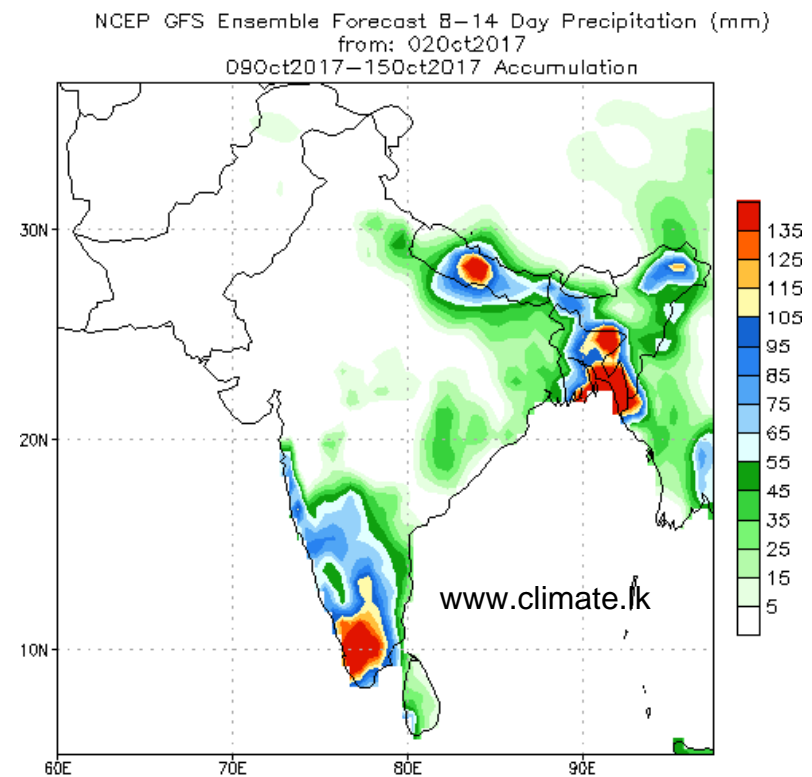


PREDICTIONS

NCEP GFS 1- 14 Day prediction



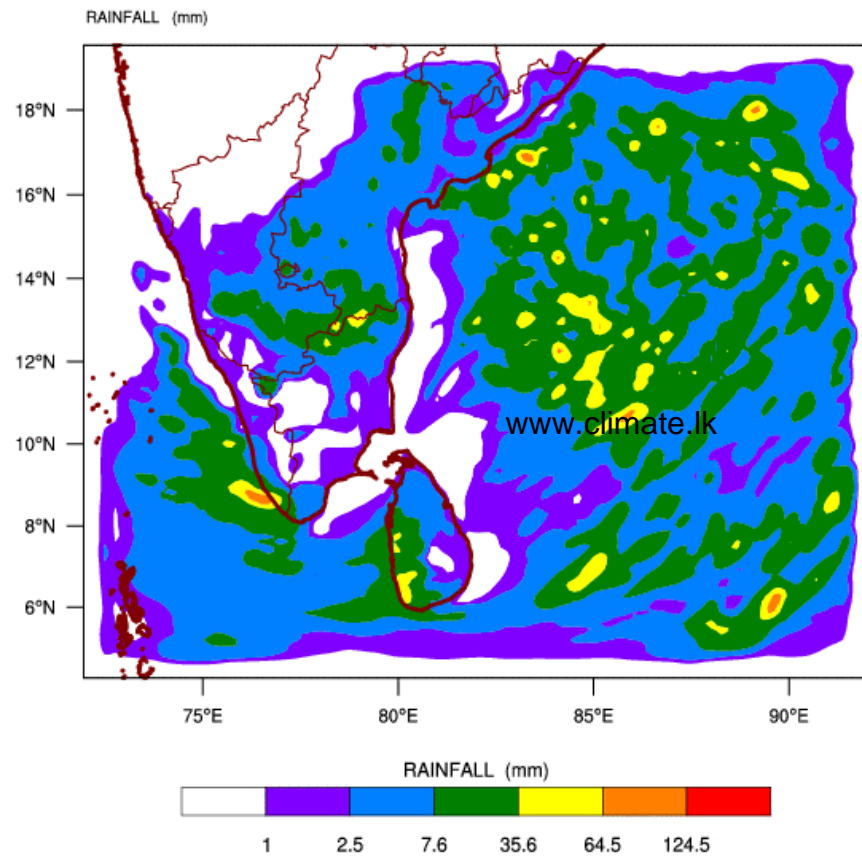
Bias correction based on last 30-day forecast error



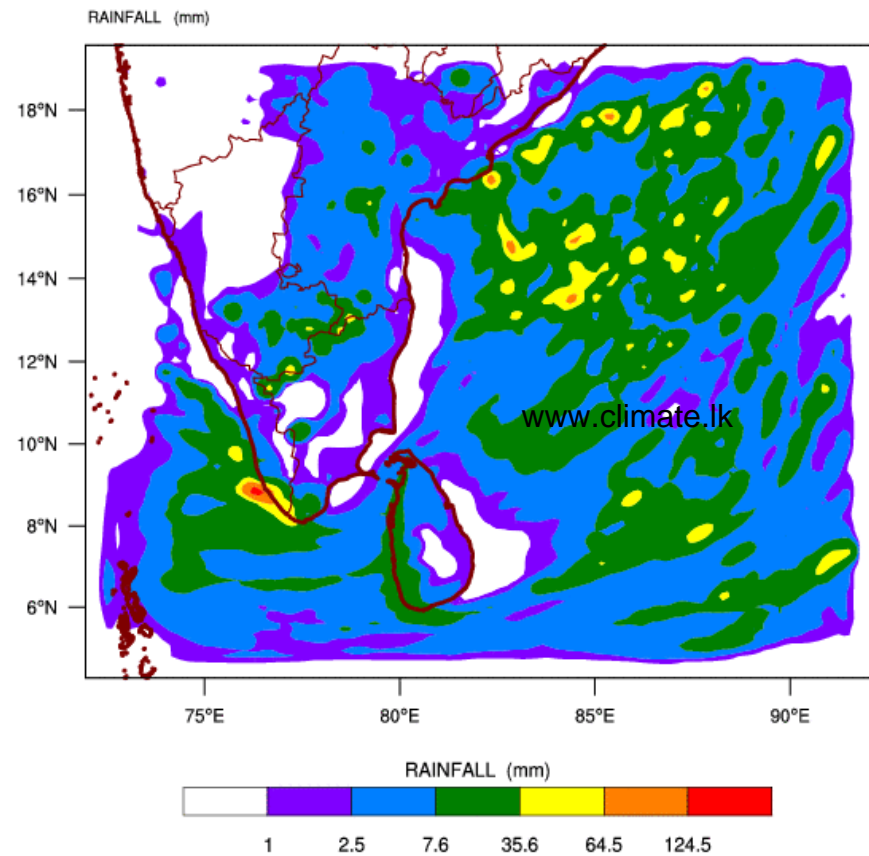
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 04-10-2017 valid for 03 UTC of 06-10-2017



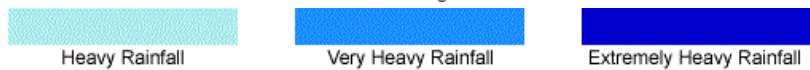
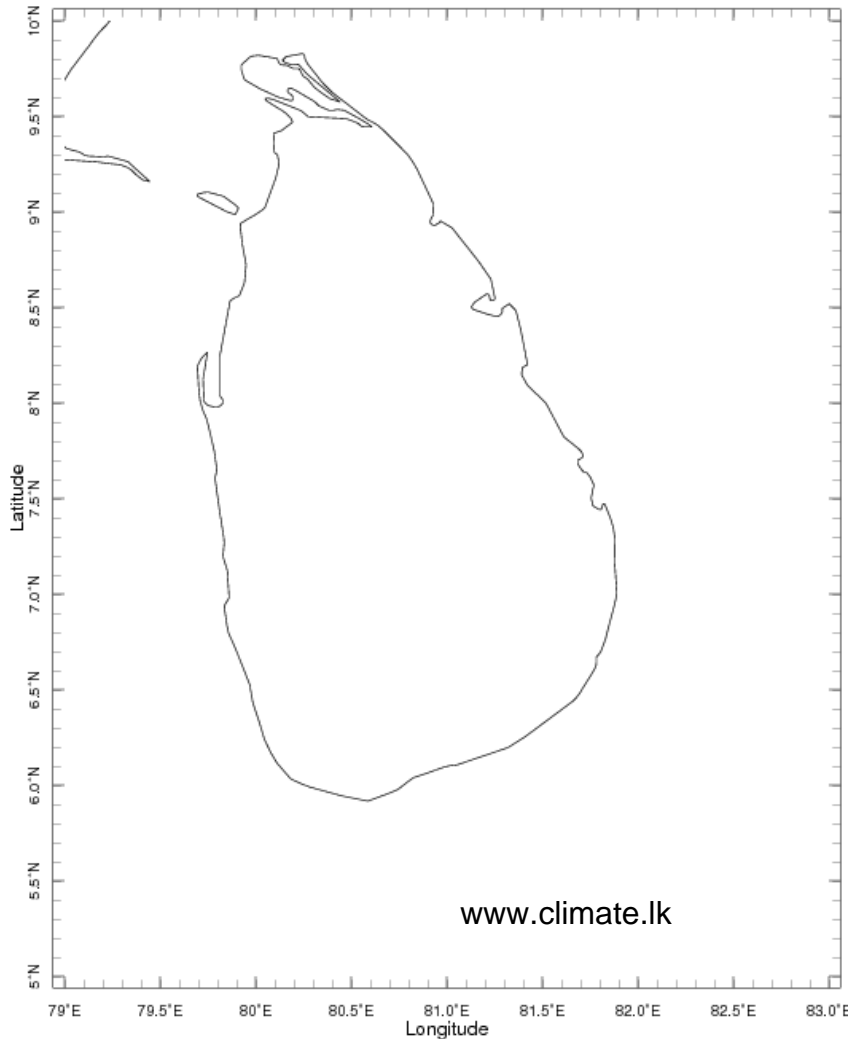
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 04-10-2017 valid for 03 UTC of 07-10-2017



Weekly Rainfall Forecast from IRI

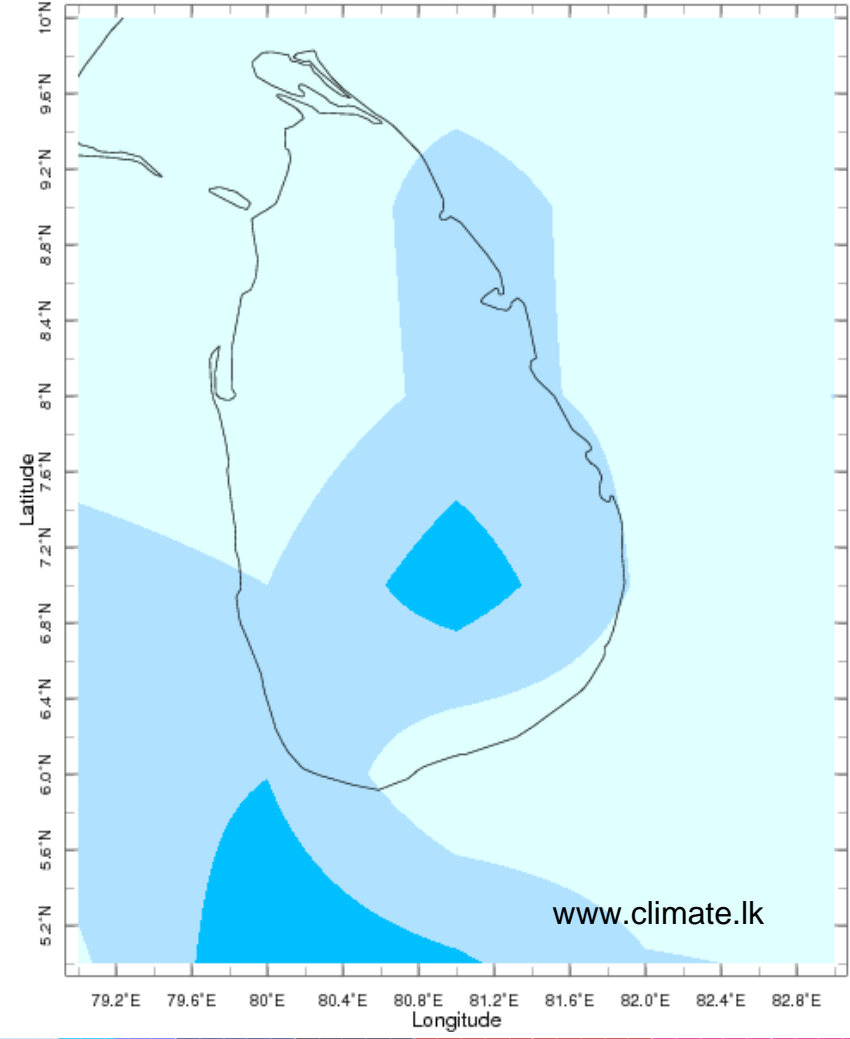
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 2-7 Oct 2017 Issued 0000 2 Oct 2017



Extreme Rainfall Forecast

Forecast for 2-7 Oct 2017 Issued 0000 2 Oct 2017



Total Six Day Precipitation Forecast

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Contact Us

email: fectsl@gmail.com

phone: (+94) 81 2376746

blog: www.fectsl.blogspot.com

Technology

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