

Experimental Climate Monitoring and Prediction

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22 June 2017**Highlights**

- The WRF model predicts up to 36 mm of rainfall in Western regions of the country on 23rd and 24th of June.
- Between 14-20 Jun: Rainfall up to 80 mm was recorded in Galle district on the 14th.
- From 11-17 Jun: minimum temperature of 15 °C was recorded from Nuwara Eliya district while northern and eastern coastal regions of the island recorded a maximum temperature between 30-35 °C.
- From 13-19 Jun: up to 36 km/h, northwesterly winds were experienced by the whole island.
- Average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring**Rainfall**

Weekly Monitoring: On June 14th, Galle district received up to 80 mm of rainfall; Matara district up to 50 mm; Ratapura and Kalutara districts up to 20 mm; and most southwestern regions of the island up to 10 mm. On the 15th several regions of Ratnapura, Matara, Hambantota, Ampara, Badulla and Monaragala districts received up to 10 mm of rainfall. On the 16th Ampara and Monaragala districts received up to 30 mm of rainfall; and Kaluara, Ratnapura, Batticaloa and Badulla districts up to 20 mm. On the 17th northern regions of Badulla district received up to 30 mm of rainfall; and Kandy district up to 20 mm. On the 18th Ampara and Monaragala districts received up to 30 mm of rainfall; Badulla, Kandy and Nuwara Eliya districts up to 20 mm; and Kegalla and Gampaha districts up to 10 mm. On the 19th Ampara district received up to 70 mm of rainfall; Batticaloa district up to 50 mm; Monaragala district up to 30 mm and Badulla district up to 20 mm. No significant rainfalls were recorded on the 20th.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 50-75 mm in Galle, Ampara, Badulla and Monaragala districts; up to 25-50 mm in Batticaloa, Ratnapura and Matara districts. It shows below average rainfall up to 50 mm Ampara, Badulla, Monaragala and Galle districts; and below average rainfall up to 10-25 mm in many western and northern parts of the island.

Monthly Monitoring: During May - above average rainfall conditions were experienced in the entire island except for Batticaloa, Ampara and Jaffna districts. Ratnapura district received up to 450 mm above average rainfall; and Kegalla, Kalutara, Matara and Galle districts received up to 360 mm; Nuwara Eliya district up to 240 mm and many parts of the island up to 120 mm. Monthly total rainfall for Ratnapura, Kalutara and Galle districts amounted to 540 mm; up to 420 mm for Kegalla district; and 360 mm for Nuwar Eliya, Colombo and Gampaha districts. The CPC Unified Precipitation Analysis tool shows ~1000 mm of total rainfall in Ratnapura district; up to ~750 mm in Kegalla, Colombo, Kalutara and Galle districts; and up to ~500 mm Kurunegala, Gampaha, Nuwara Eliya and Matara districts; up to 300 mm in Puttalam, Kandy, Badulla, Monaragala and Hambantota districts; and up to 200 mm in Anuradhapura, Polonnaruwa and Matale districts.

Ocean State (Text Courtesy IRI)**Pacific sea state: June 15, 2017**

In mid-June 2017, the tropical Pacific remained in an ENSO-neutral state, with SSTs not far from the El Niño threshold in the east-central tropical Pacific but the atmosphere maintaining ENSO-neutral patterns. The collection of latest ENSO prediction models indicates ENSO-neutral as the most likely condition during summer, with chances for El Niño development rising to about 40-45% during fall and early winter.

Indian Ocean State

Average sea surface temperature was observed in the seas around Sri Lanka.

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 21st-27th Jun: Total rainfall between 115-125 mm Ratnapura district; up to 95-105 mm in Colombo, Kegalla, Kandy, Nuwara Eliya and Galle districts; up to 45-55 mm in Gampaha, Matale, Kandy, Nuwara Eliya and Matara districts; up to 35-45 mm in Puttalam and Kurunegala districts.

From 28th Jun-4 Jul: Total rainfall between 95-105 mm in Kegalla, Gampaha and Ratnapura districts; and up to 45-55 mm in Puttalam, Kurunegala, Kandy, Nuwara Eliya and Galle districts.

IMD WRF & IRI Model Forecast:

23th Jun: Up to 36 mm of rainfall in Puttalam, Kurunegala, Gampaha, Colombo, Kalutara, Galle, Ratnapura and Kegalla districts; and up to 8 mm in Mannar, Vavuniya, Anuradhapura, Matale, Kandy, Nuwara Eliya, Ampara, Monaragala and Matara.

24th Jun: Up to 36 mm of rainfall in Puttalam, Kurunegala, Gampaha, Colombo, Kalutara, Galle, Ratnapura and Kegalla districts; and up to 8 mm in Mannar, Vavuniya, Anuradhapura, Matale, Kandy, Nuwara Eliya, Ampara and Matara.

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 enhance the rainfall in Sri Lanka.

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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

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

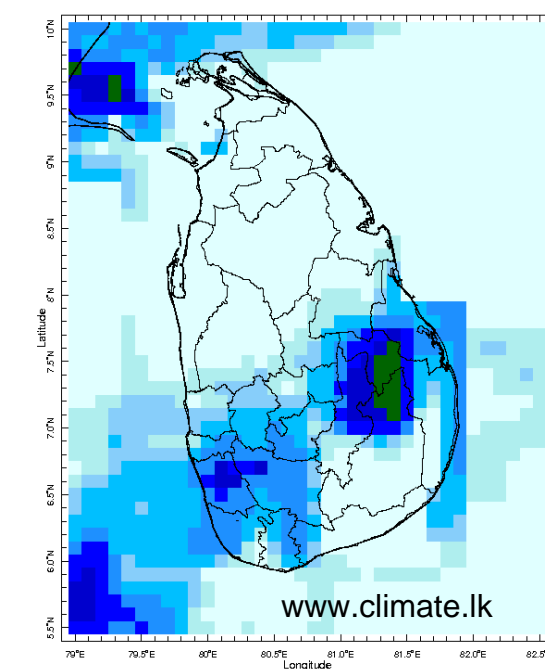
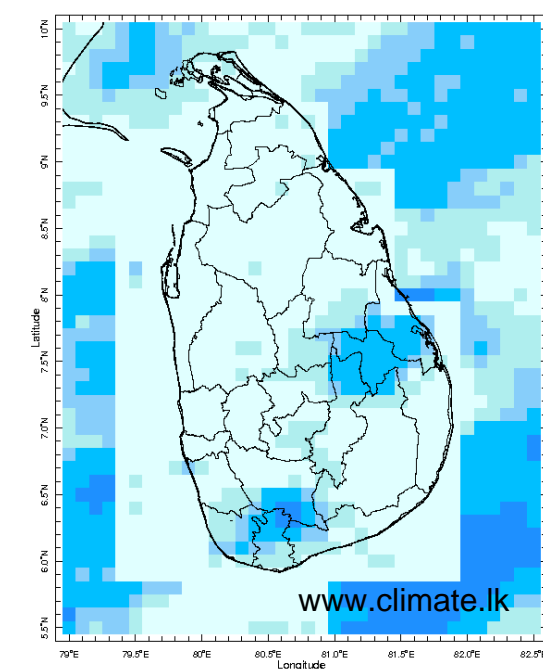
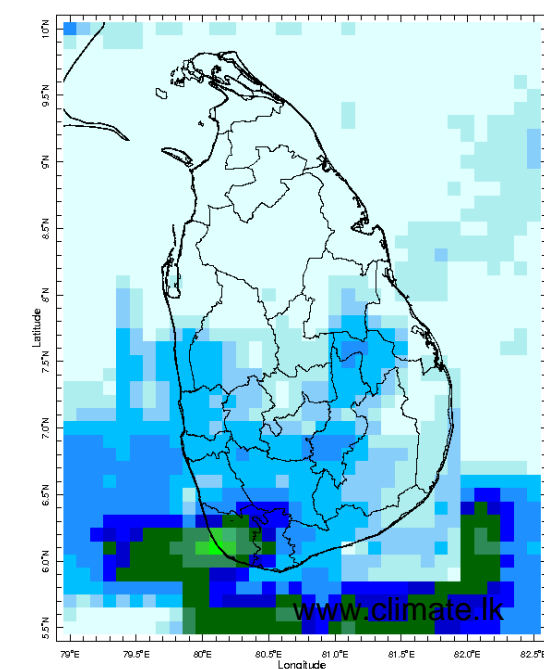
2. Predictions

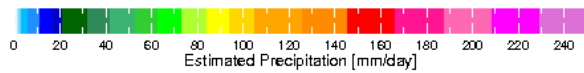
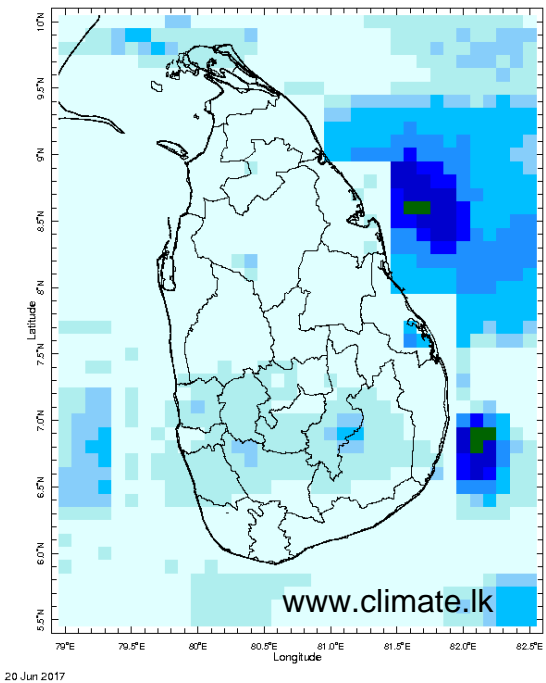
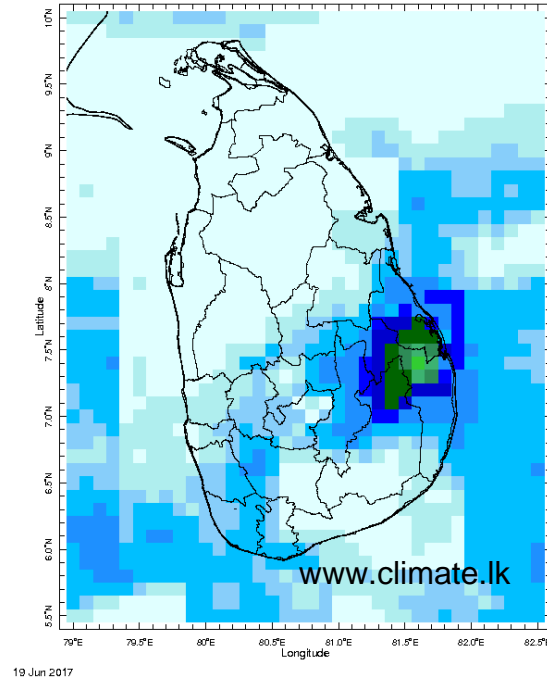
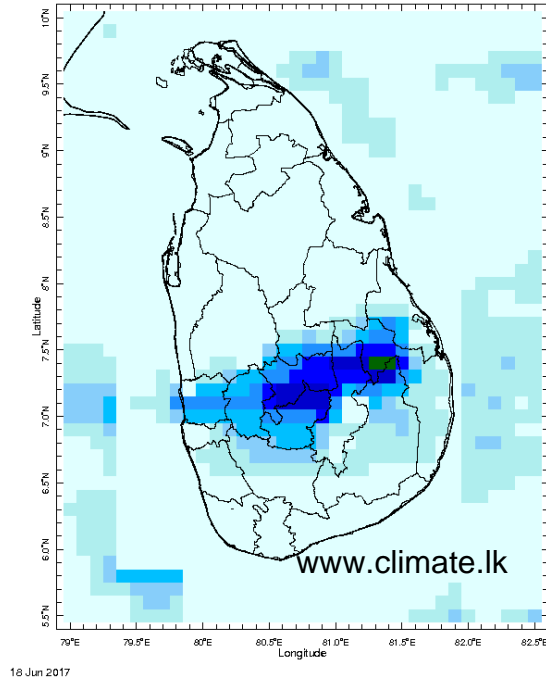
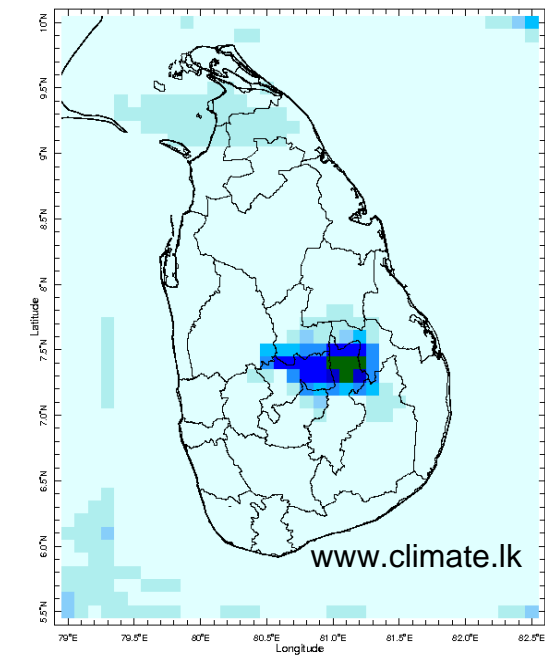
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

MONITORING

Daily Rainfall Monitoring

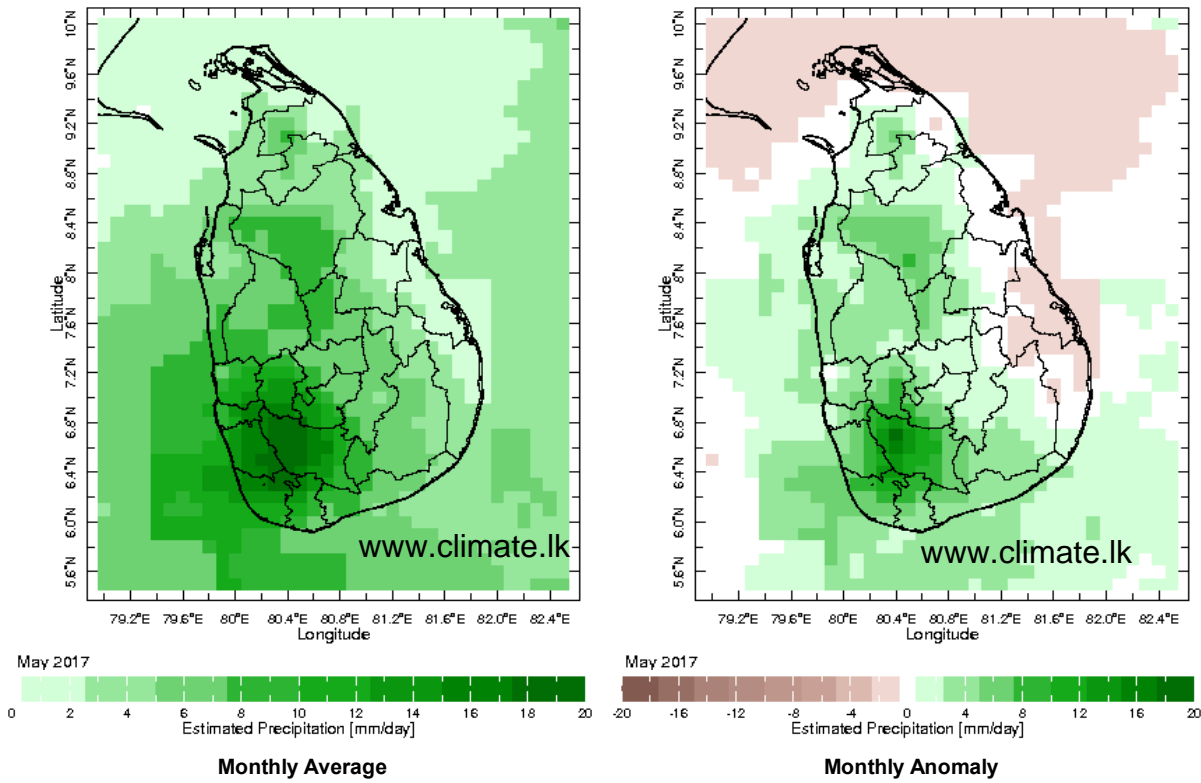
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



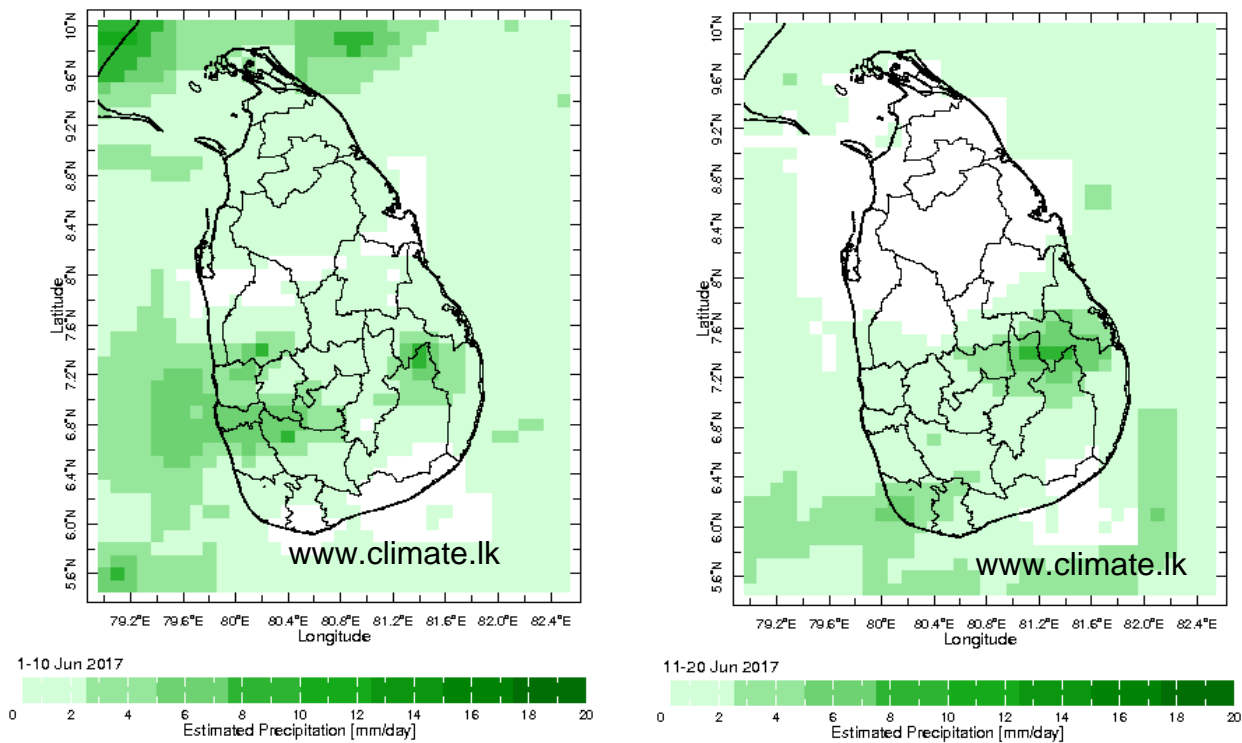


Monthly Rainfall Monitoring

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

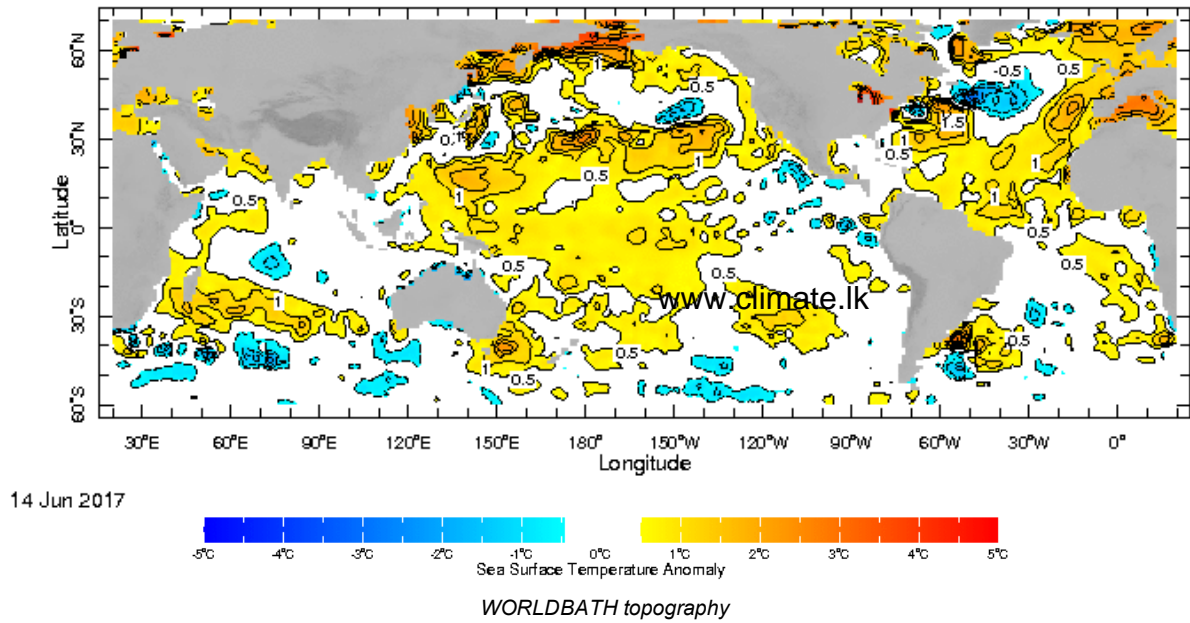


Dekadal (10 Day) Satellite Derived Rainfall Estimates

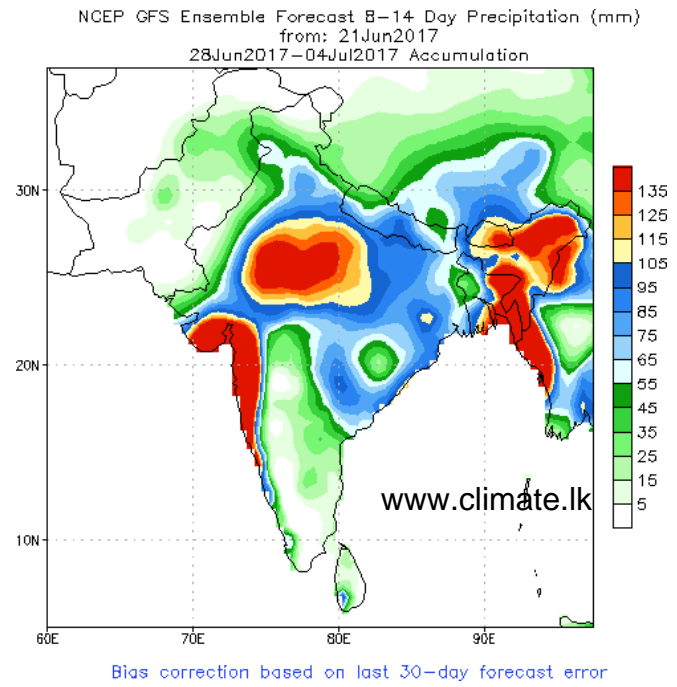
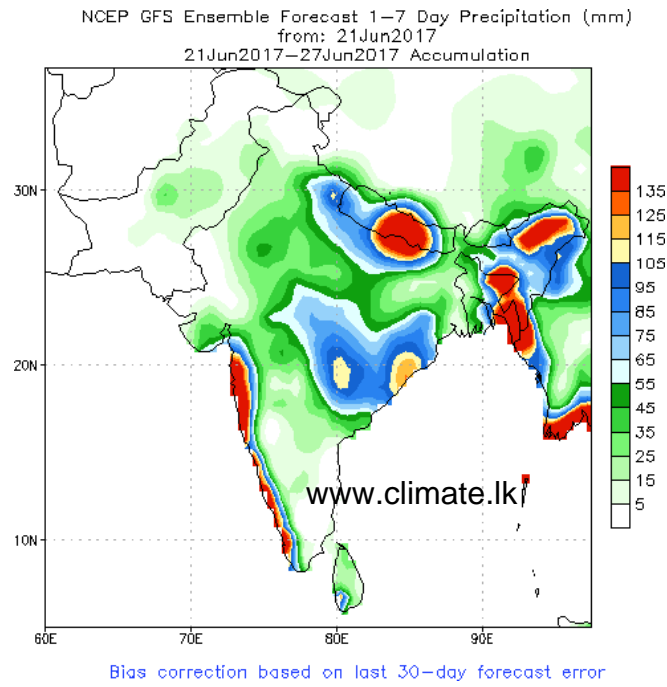


Weekly Average SST Anomalies

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

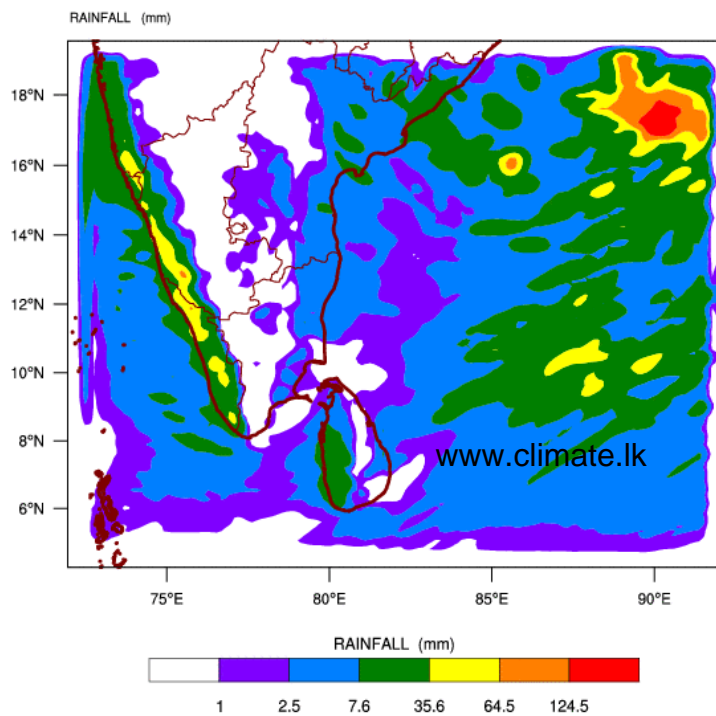


NCEP GFS 1- 14 Day prediction

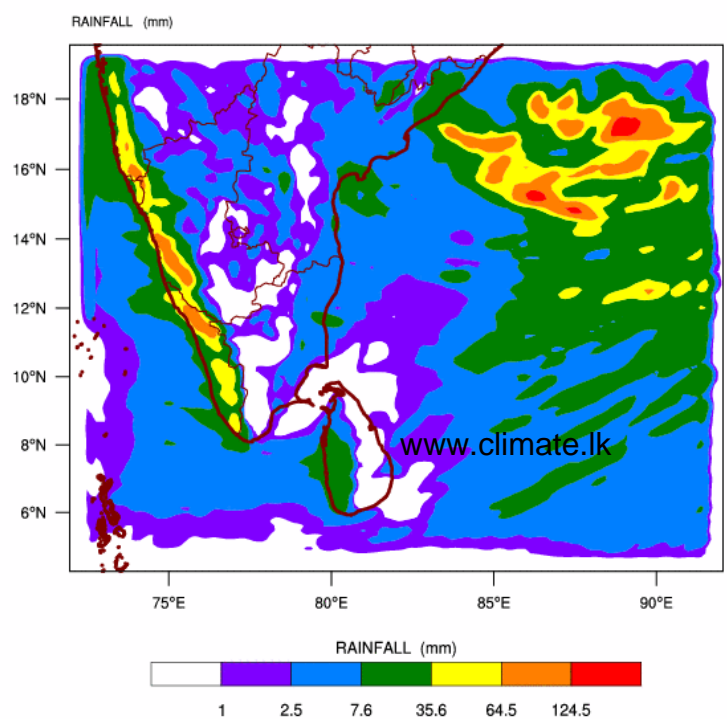


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 21-06-2017 valid for 03 UTC of 23-06-2017

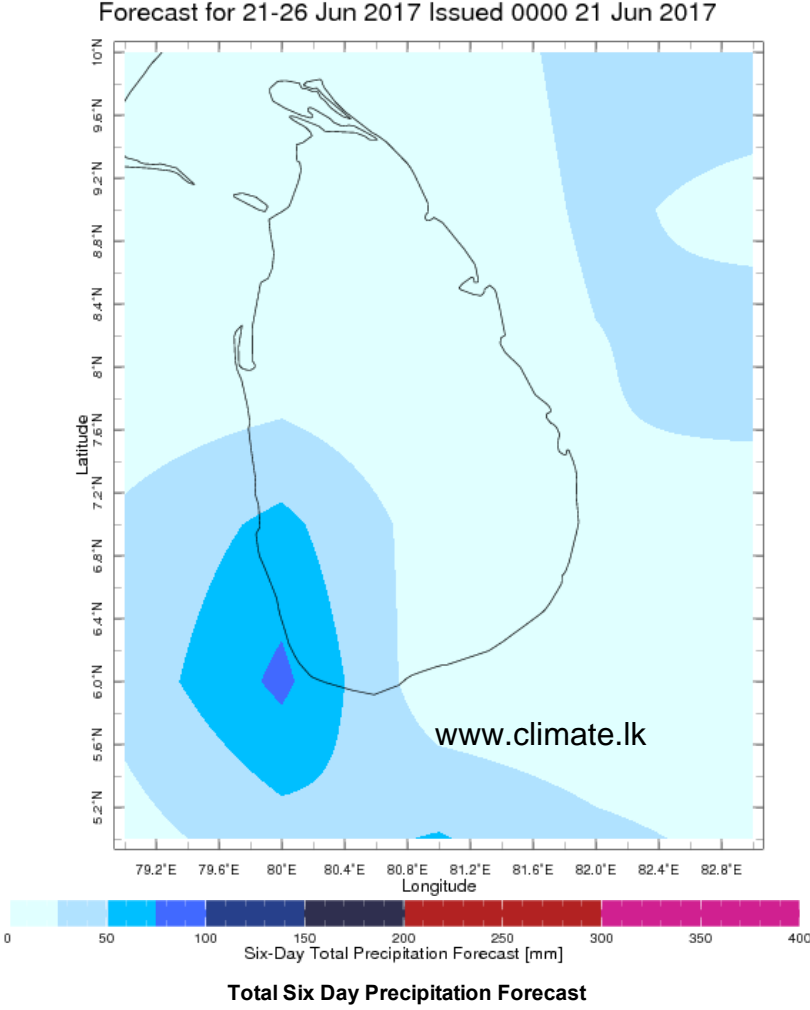
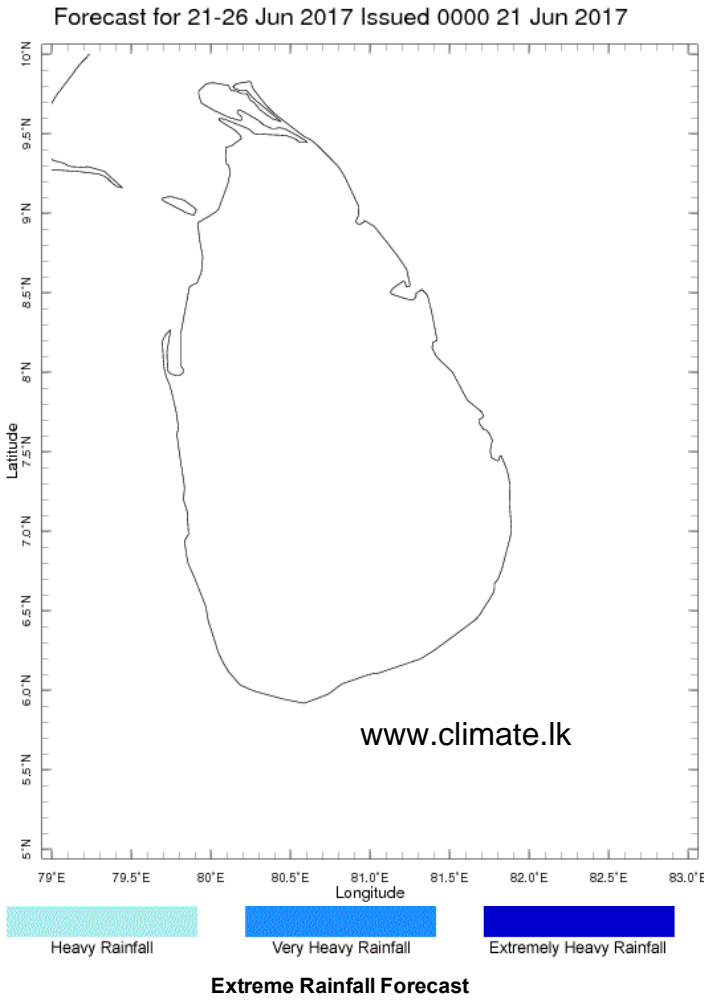


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 21-06-2017 valid for 03 UTC of 24-06-2017



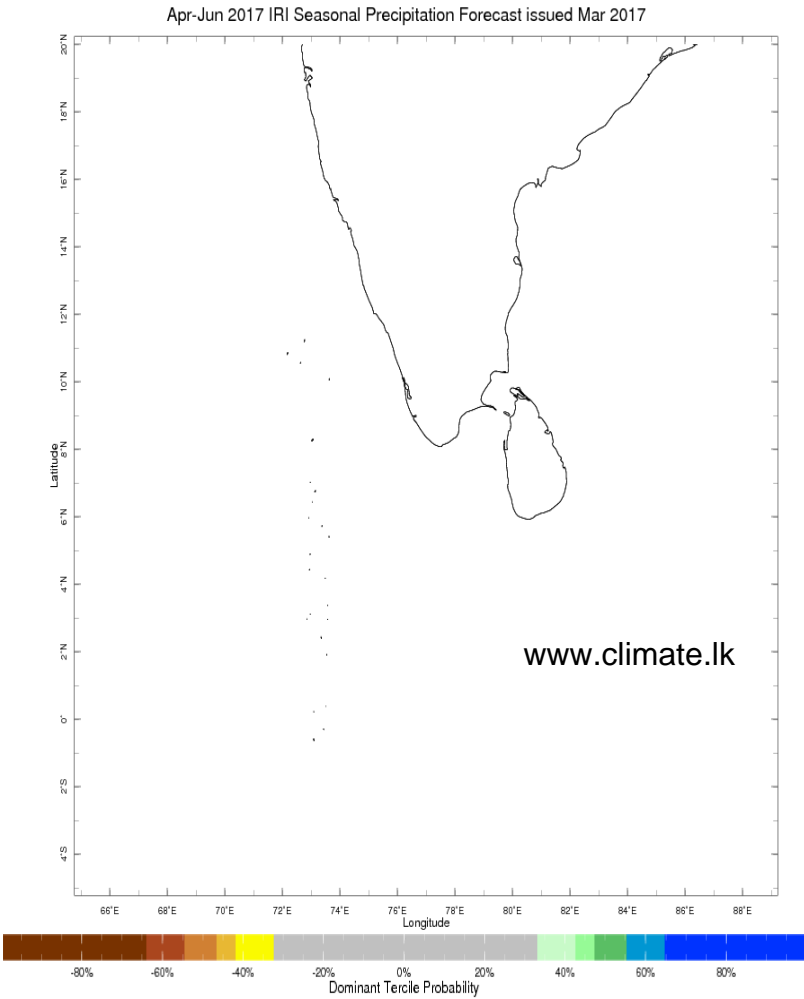
Weekly Rainfall Forecast from IRI

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.

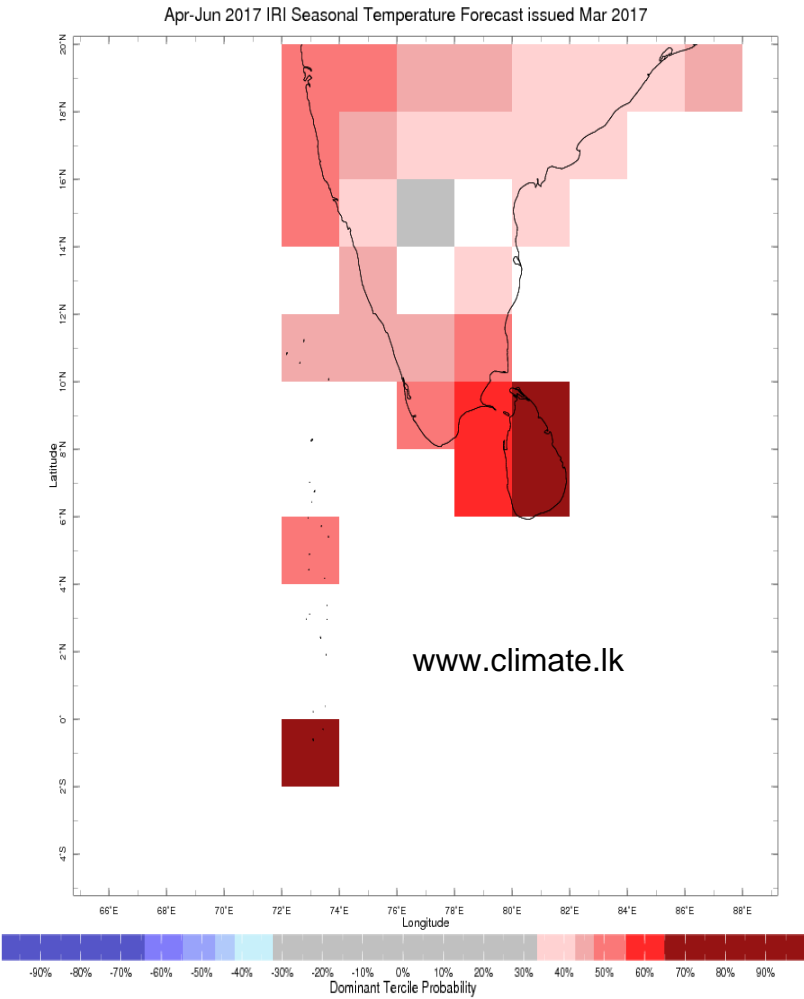


Seasonal Rainfall and Temperature Forecast

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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