

Experimental Climate Monitoring and Prediction

by: Ruchira Lokuhetti, Himash Rashmika, Janan Visvanathan,

Lareef Zubair and Michael Bell¹ (FECT and IRI¹)

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Highlights

- The WRF model predicts total rainfall between 115-125 mm in Kegalle district from 31st May to 6th June.
- Between 24-30 May: Rainfall more than 240 mm was recorded in Ratnapura, Galle and Matara districts on the 24th and also on the 25th in Ratnapura district.
- From 21-27 May: minimum temperature of 15 °C was recorded from Nuwara Eliya district while eastern and northeastern regions of the island recorded a maximum temperature between 30-35 °C.
- From 23-29 May: up to 54 km/h, northwesterly winds were experienced by the southern and central regions; and up to 36 km/ in the northern regions of the island.
- Average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On May 24th, Ratnapura, Galle and Matara districts received more than 240 mm of rainfall; Kalutara district up to 220 mm; Gampaha, Colombo, Hambantota and Kegalla districts up to 90 mm; Anuradhapura, Nuwara Eliya and Kurunegala districts up to 80 mm; Kandy, Trincomalee and Puttalam district up to 60 mm; Vavuniya, Matale, and Monaragala districts up to 50 mm; Polonnaruwa district up to 40 mm; Mannar, Mullaitivu, Batticaloa, Ampara and Badulla districts up to 30 mm; and adjacent southwestern sea of the island up to 170 mm. On the 25th Ratnapura district received more than 240 mm of rainfall; Colombo, Kalutara, Galle, Matara and Nuwara Eliya districts up to 170 mm; Kegalla, Hambantota and Monaragala districts up to 120 mm; Badulla, Kandy and Gampaha districts up to 90 mm; Ampara and Kurunegala districts up to 40 mm; Puttalam district up to 30 mm; and Matale district up to 20 mm. On the 26th Kalutara and Ratnapura districts received up to 50 mm of rainfall; Gampaha, Colombo, Kegalla, Galle and Matara districts up to 40 mm; Nuwara Eliya district up to 30 mm; and Kandy, Badulla, Monaragala and Hambantota and several regions of Puttalam and Kurunegala districts up to 20 mm. Up to 10 mm of rainfall was recorded in several parts of Nuwara Eliya and Ratnapura districts on the 27th. On the 28th Colombo, Gampaha and Kalutara districts received up to 50 mm of rainfall; Kegalla, and Ratnapura districts up to 40 mm; and Nuwara Eliya, Kandy and several regions of Puttalam and Kurunegala districts up to 20 mm. On the 29th Ratnapura district received up to 90 mm of rainfall; Kalutara district up to 70 mm; Nuwara Eliya and Kurunegala districts up to 50 mm; Galle district up to 40 mm; Gampaha, Colombo, Matara, Kandy and several regions of the Matale and Polonnaruwa districts up to 30 mm; and Puttalam, Ampara, Monaragala and Hambantota districts up to 20 mm. On the 30th Ratnapura district received up to 50 mm; Kegalla, Galle and Monaragala districts up to 30 mm; Kalutara, Gampaha, Kurunegala, Matale, Kandy and Nuwara Eliya districts up to 20 mm.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 500-750 mm in Ratnapura district; up to 300-500 mm in Nuwara Eliya, Colombo, Kalutara, Galle, and Matara districts; up to 200-300 mm Gampaha, Kegalla, Monaragala and Hambantota districts; up to 150-200 mm in Kandy and Badulla districts; up to 100-150 mm in Puttalam, Kurunegala, Matale, Anuradhapura, Trincomalee, Polonnaruwa, Batticaloa and Ampara districts. It shows above average rainfall more than 500 mm for Ratnapura district; up to 300-500 mm in Kalutara, Galle and Matara districts; up to 200-300 in Colombo, Gampaha, Kegalla and Nuwara Eliya district; up to 100-200 mm in Kandy, Badulla, Monaragala and Hambantota districts; and 50-100 mm in Puttalam, and Kurunegala 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: May 18, 2017

By mid-May 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. The collection of ENSO prediction models indicates increasing chances of El Niño into the summer and fall of 2017.

Indian Ocean State

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

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 31st May – 6th Jun: Total Rainfall between 115-125 mm in Kegalle district; 105-115 mm in Ratnapura district; 95-105 mm in Gampaha, Nuwara Eliya and Matara districts; 55-65 mm in Colombo, Kalutara and Galle districts; 45-55 mm in Kandy and Badulla; 35-45 mm in Kurunegala and Anuradhapura districts; 25-35 mm in Puttalam, Mannar, Mullaitivu, Trincomalee, Polonnaruwa and Matale districts; 15-25 mm in Monaragala district; 5-15 mm in Jaffna, Kilinochchi, Batticaloa, Ampara districts.

From 7th Jun – 12th Jun: Total rainfall between 75-85 mm in Ratnapura district; 65-75 mm in Colombo, Kegalle and Matara districts; 55-65 mm in Kalutara and Galle districts; 35-45 mm in Anuradhapura districts; 25-35 mm in Northern province and Trincomalee, Kurunegala, Nuwara Eliya and Badulla districts; 15-25 mm in Puttalam, Polonnaruwa, Matale, Kandy and Monaragala districts;

IMD WRF & IRI Model Forecast:

No Model output due to technical problem.

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 in the next 10 days and shall suppress the rainfall for the next 5 days.

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/>

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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

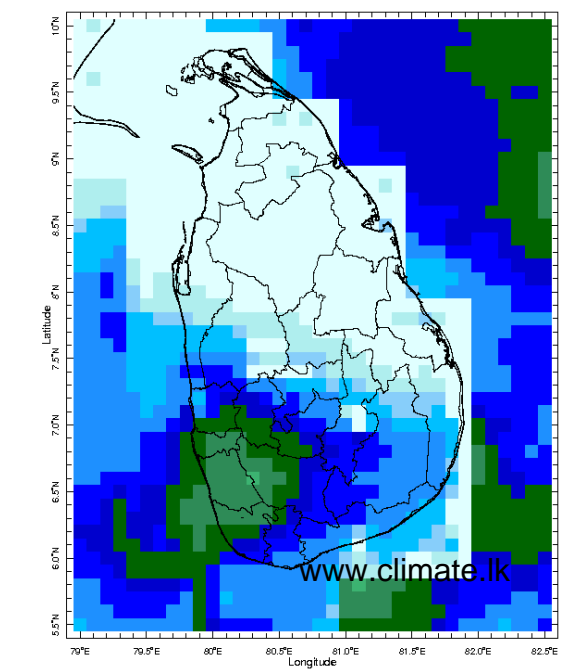
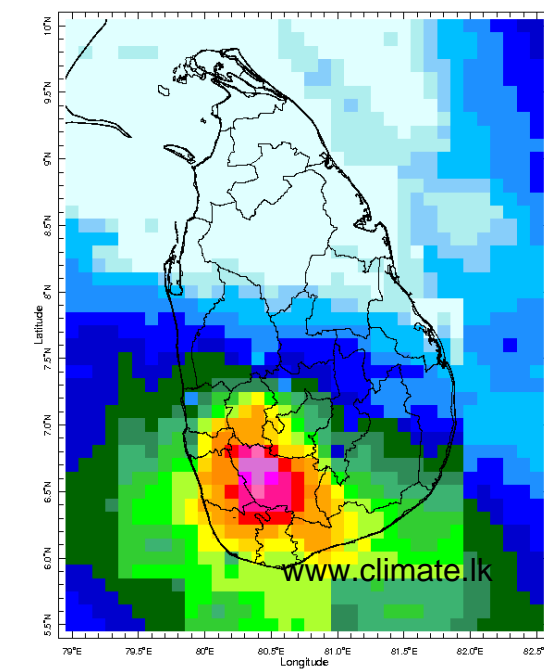
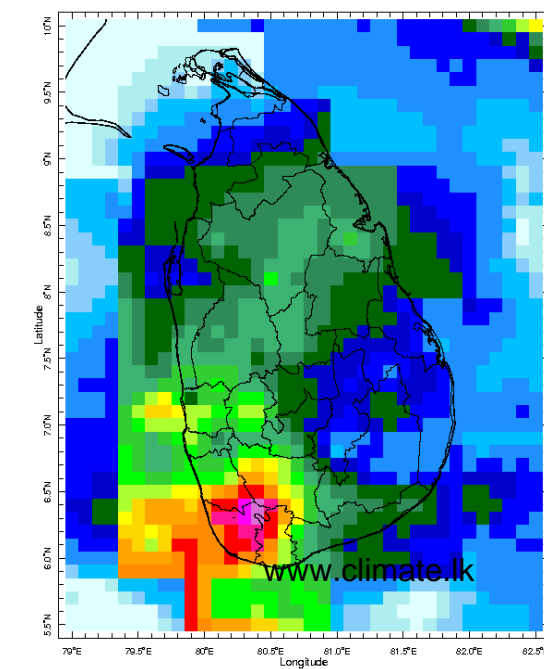
2. Predictions

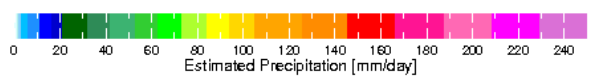
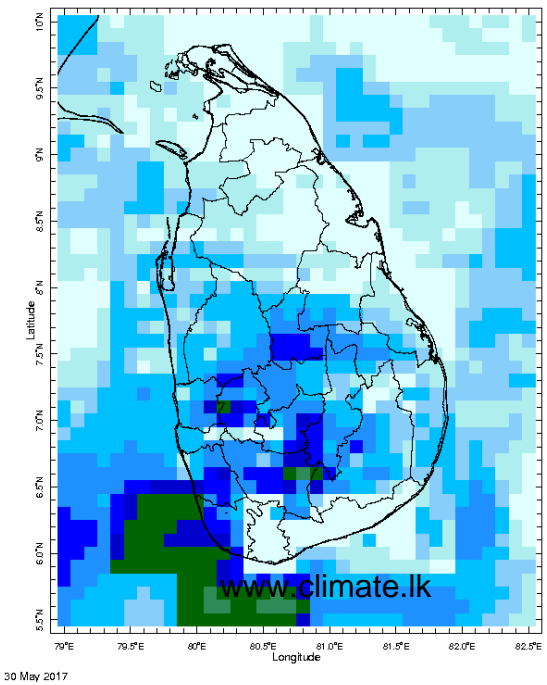
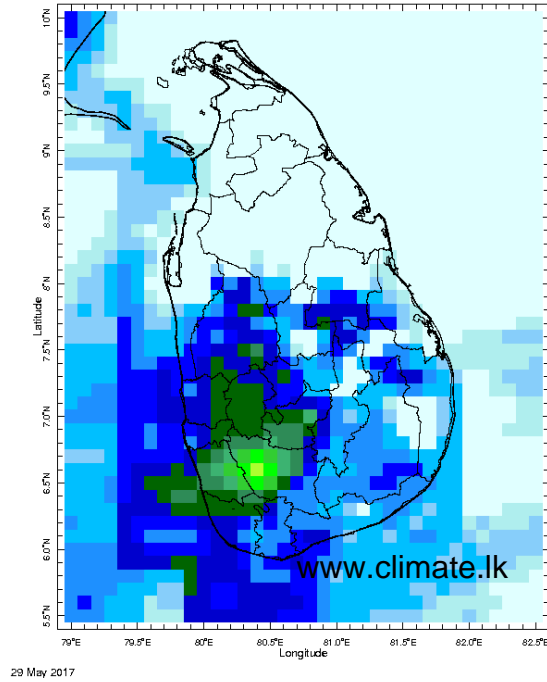
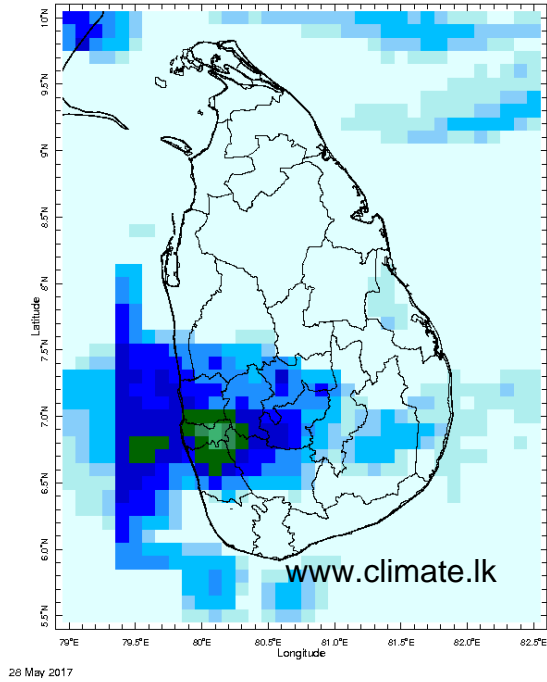
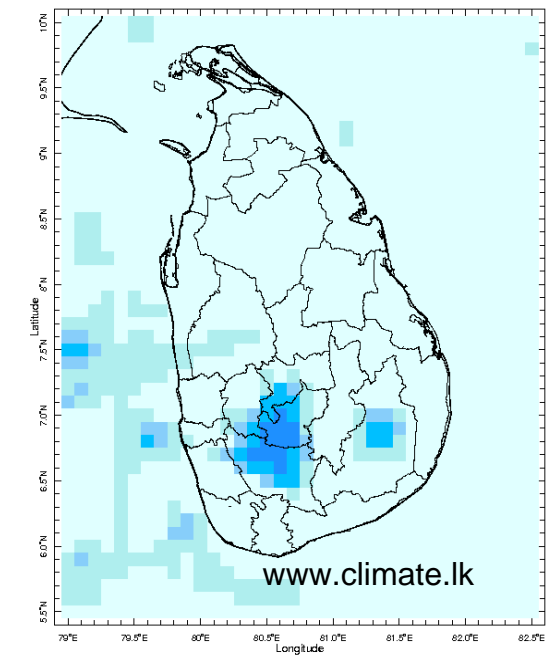
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

MONITORING

Daily Rainfall Monitoring

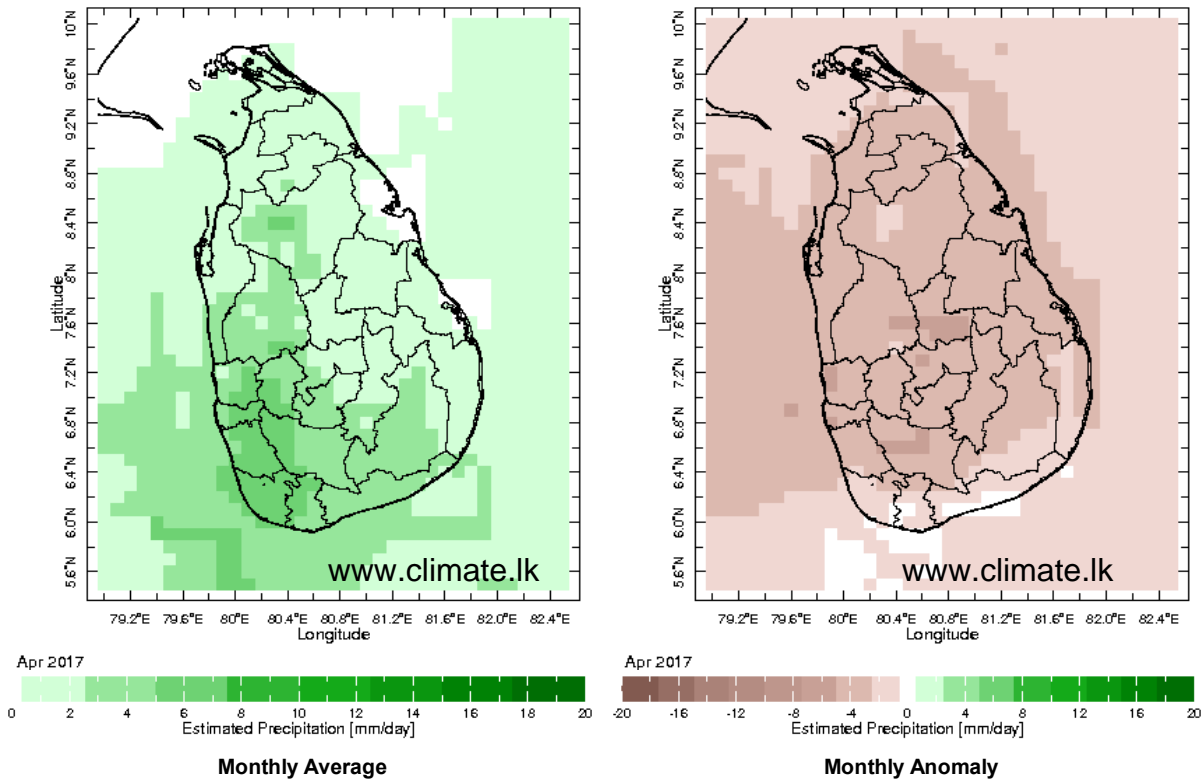
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



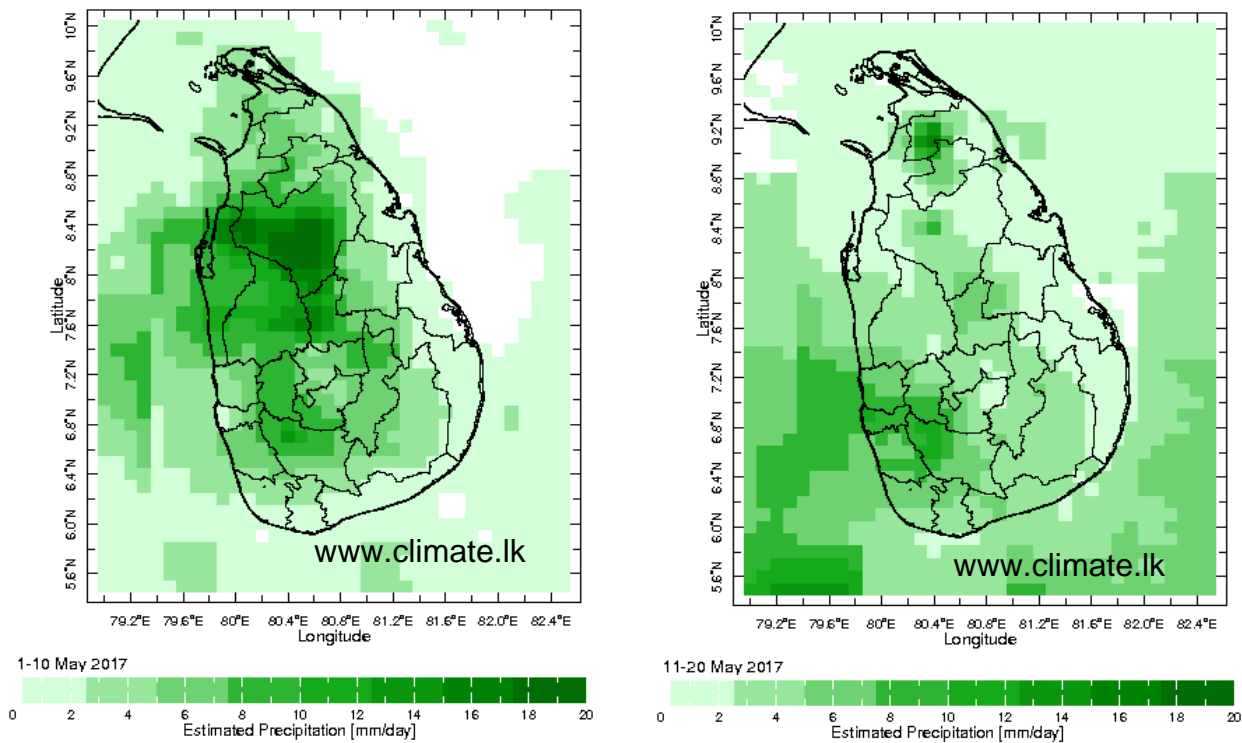


Monthly Rainfall Monitoring

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

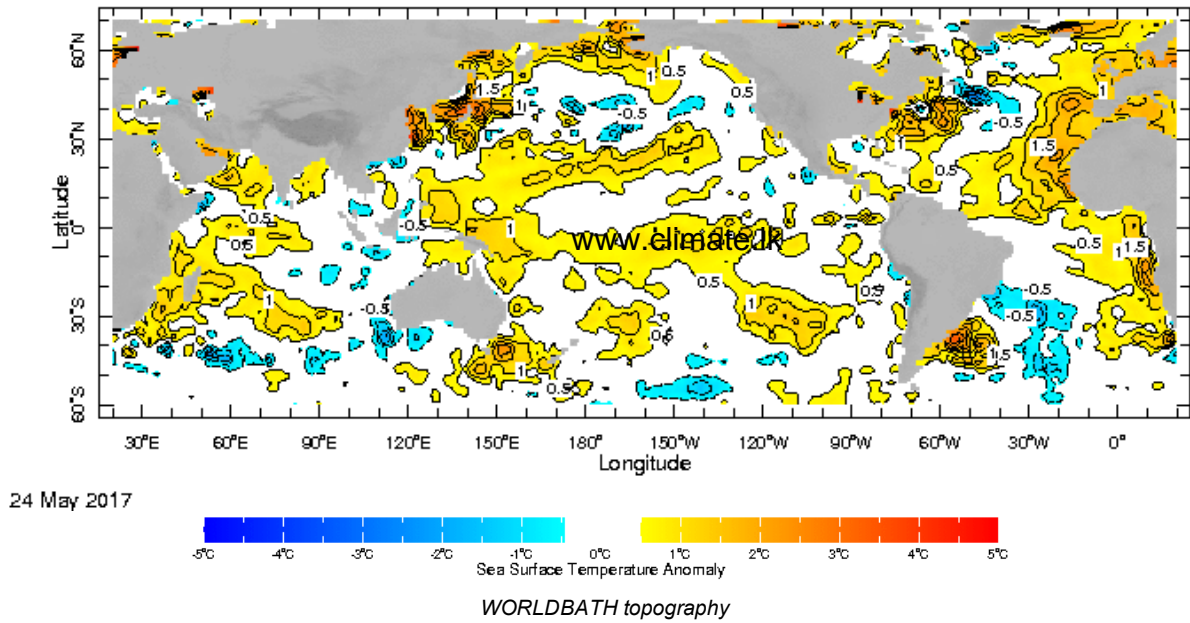


Dekadal (10 Day) Satellite Derived Rainfall Estimates

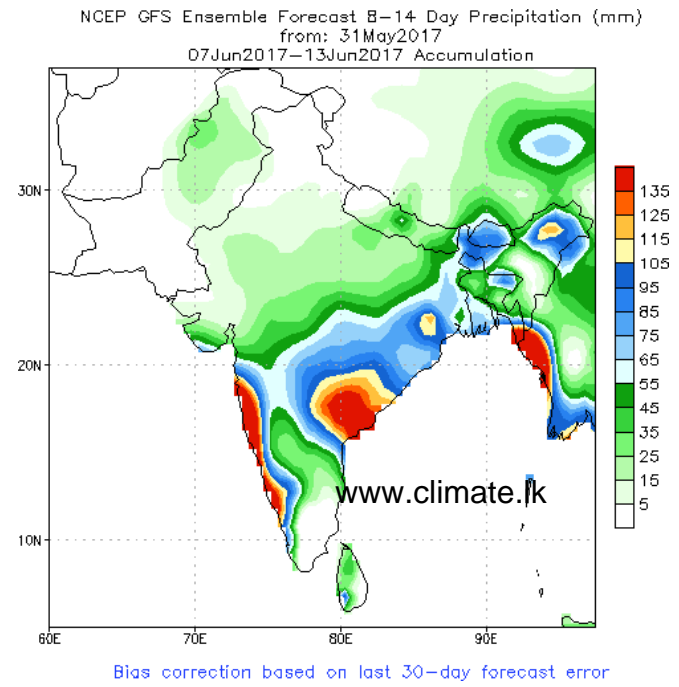
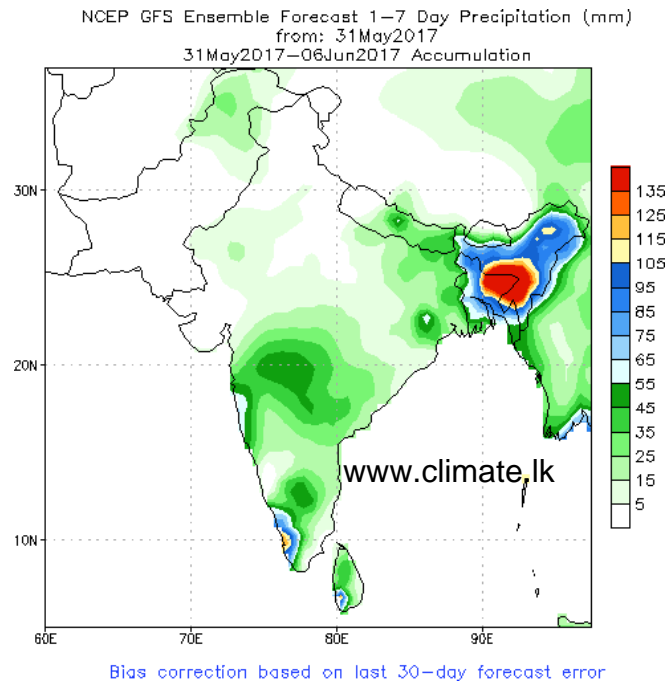


Weekly Average SST Anomalies

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)

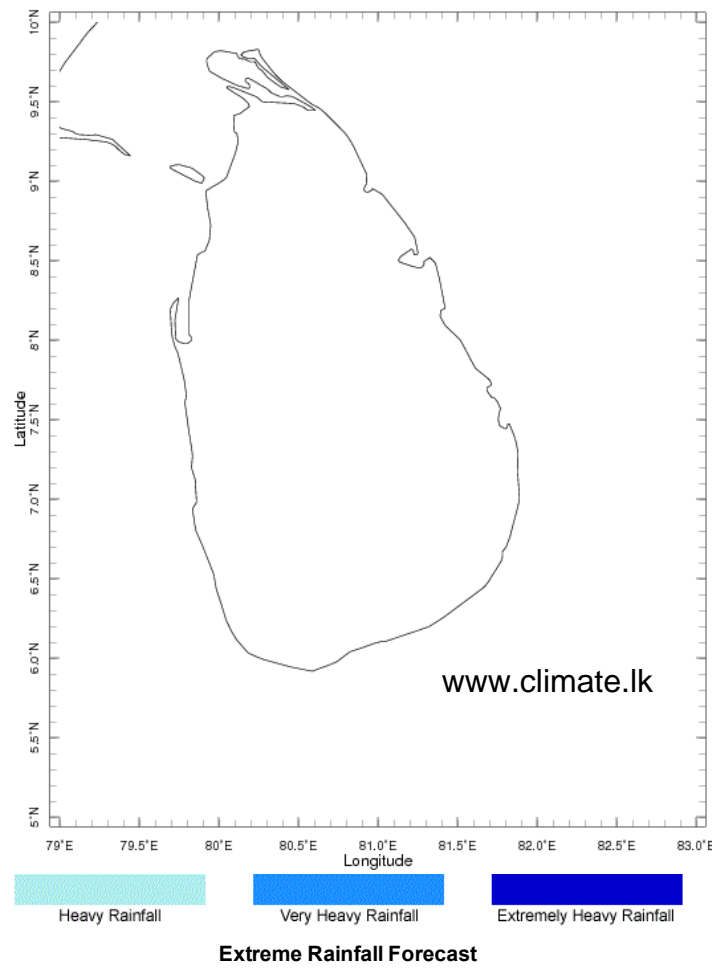
No Model output due to technical problem

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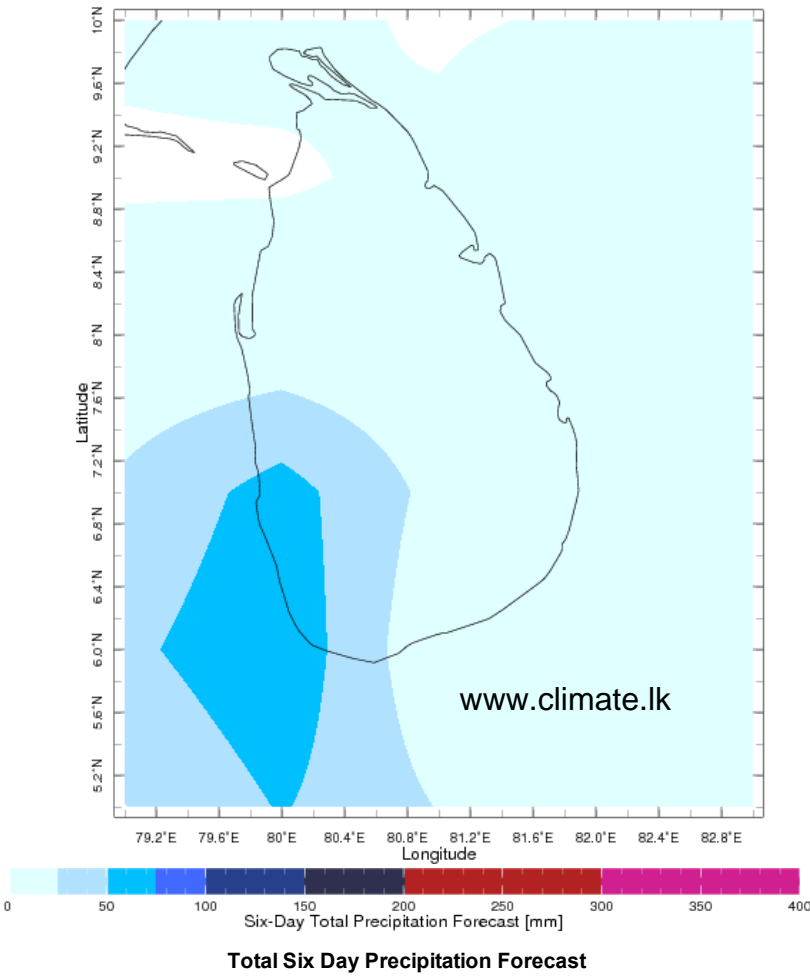
Weekly Rainfall Forecast from IRI

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 2017 - 4 Jun 2017 Issued 0000 30 May 2017

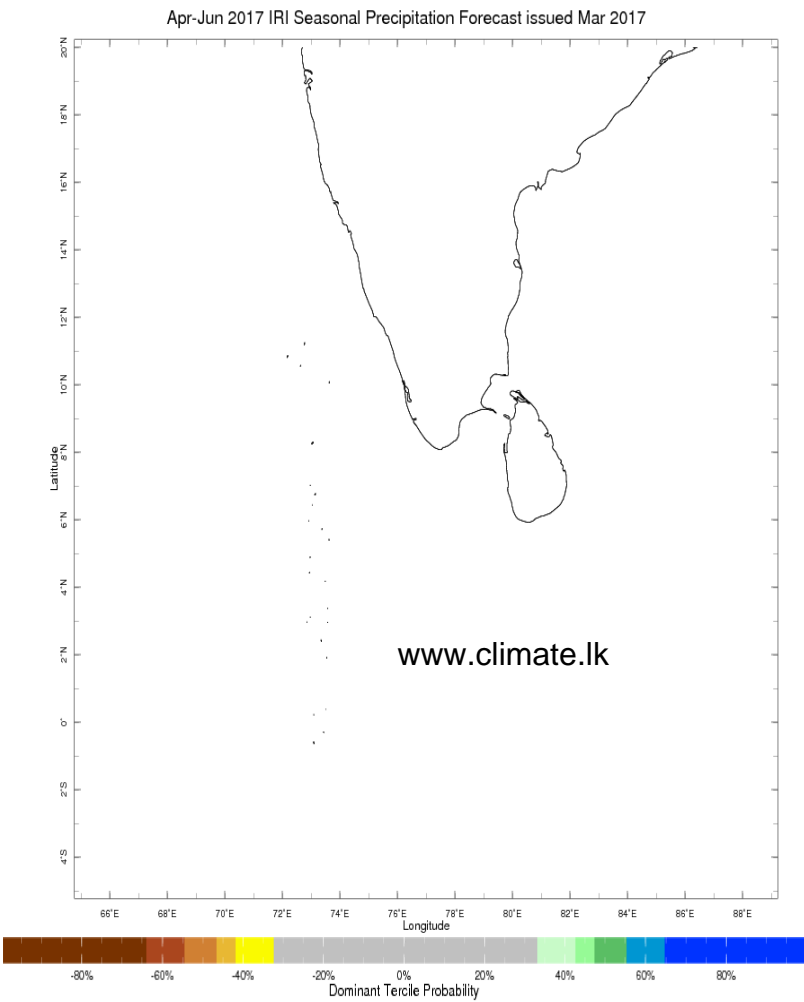


Forecast for 30 May 2017 - 4 Jun 2017 Issued 0000 30 May 2017

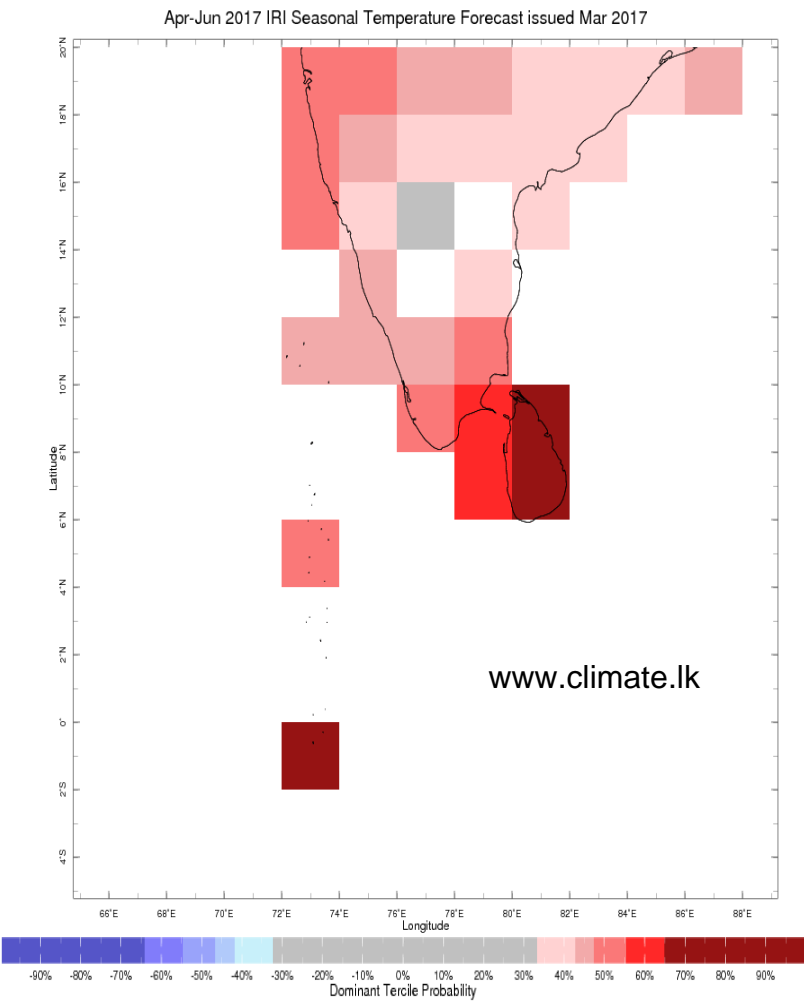


Seasonal Rainfall and Temperature Forecast

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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Contact Us

email: fectsl@gmail.com

phone: (+94) 81 2376746

blog: www.fectsl.blogspot.com

Foundation for Environment, Climate & Technology

C/O Mahaweli Authority of Sri Lanka,

Digana Village,

Rajawella,

SRI LANKA