

Experimental Climate Monitoring and Prediction

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Highlights

- The NCEP weekly rainfall forecast predicts total rainfall between 125-135 mm in Galle district during 9th -15th May.
- Between 24-30 Apr: up to 90 mm of rainfall was recorded in Kalutara and Galle on the 27th.
- From 22-28 Apr: minimum temperature of 15 °C was recorded from Nuwara Eliya district while Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura and Kurunegala districts recorded a maximum temperature between 35-40 °C.
- 0.5 °C above average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On April 24th, Ratnapura district received up to 50 mm of rainfall; Kegalla, Kalutara and Galle districts received up to 30 mm; Mullaitivu, Vavuniya, Kurunegala, Kandy, Nuwara Eliya, Badulla and Monaragala districts up to 10 mm; and most of the country up to 10 mm. On the 25th, Colombo district received up to 50 mm of rainfall; Gampaha, Puttalam, Anuradhapura and Polonnaruwa districts received up to 40 mm, Mullaitivu, Vavuniya, Kurunegala, Matale, Kandy, Nuwara Eliya, Kegalla, Ratnapura and Kalutara districts up to 30 mm; and Ampara, Badulla and Monaragala districts up to 10 mm. On the 26th, Mannar and western regions of Anuradhapura district received up to 50 mm of rainfall; Kandy district up to 30 mm; and Puttalam, Kegalla, Badulla, Monaragala and southern regions of Kurunegala district up to 20 mm. On the 27th, Kalutara and Galle districts received up to 90 mm of rainfall; Colombo and Ratnapura districts up to 50 mm; Kegalla and Nuwara Eliya districts up to 40 mm; Gampaha, Kandy and Matara districts up to 30 mm; Vavuniya, Anuradhapura, Puttalam, Kurunegala, Badulla, Monaragala and Hambantota districts up to 20 mm. On the 28th, Badulla district received up to 50 mm; Puttalam, Gampaha, Colombo, Kegalla, Nuwara Eliya, Ratnapura, Monaragala, Hambantota and Ampara districts up to 30 mm; and Kurunegala, Matale, Kandy, Batticaloa, Kalutara, Ratnapura, Galle, Matara, and Ratnapura districts up to 20 mm. On the 29th, Ratnapura district received up to 50 mm of rainfall; Kurunegala, Kegalla, Nuwara Eliya and Matara districts up to 30 mm; and Anuradhapura, Matale, Kandy, Gampaha, Colombo, Kalutara, Galle and Hambantota districts up to 20 mm. On the 30th, Ratnapura, Matara and Colombo districts received up to 10 mm of rainfall.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall 100-150 mm of total rainfall in Puttalam, Kurunegala, Kandy, Nuwara Eliya, Kegalla, Kalutara, Colombo and Gampaha districts; up to 75-100 mm Anuradhapura, Matale, Badulla, Galle and Matara districts; and up to 50-75 mm in Mannar, Polonnaruwa and Monaragala districts. Above average rainfall up to 50-100 mm is shown for Kurunegala, Kandy, Nuwara Eliya, Kegalla, Ratnapura and Colombo districts; and up to 25-50 mm in Gampaha, Kalutara, Galle and Matale districts. Below average rainfall is shown for Jaffna, Mullaitivu, Trincomalee, Batticaloa and Ampara districts.

Monthly Monitoring: During April - above average rainfall conditions were experienced by southwestern regions of the island; and rest of the country experienced below average rainfall. Vavuniya and Jaffna districts received up to 150 mm below average rainfall; and Kilinochchi, Mullaitivu, Anuradhapura, Trincomalee, Anuradhapura, Polonnaruwa, Batticaloa, Ampara, Badulla, Monaragala, Matale, Kandy and Kurunegala districts up to 90 mm. Galle and Matara districts received above average rainfall up to 150 mm; and Gampaha, Colombo, Kalutara, Kegalla, Ratnapura and Nuwara Eliya districts up to 90 mm. The CPC Unified Precipitation Analysis tool shows ~500 mm of total rainfall in Kurunegala, Kegalla, Ratnapura, Gampaha, Colombo, Kalutara, Galle and Matara districts; up to 300 mm Puttalam, Kurunegala, Kandy, Badulla, and Monaragala districts; up to ~200 mm in Anuradhapura, Matale and Hambantota districts; and up to 150 mm in Mannar, Polonnaruwa and Ampara districts.

Ocean State (Text Courtesy IRI)

Pacific sea state: April 19, 2018

In mid-April 2018, the east-central tropical Pacific waters were at warm-neutral to borderline La Niña levels, while many key atmospheric variables continued to indicate weak La Niña. Importantly, the east Pacific subsurface water temperature has become moderately above average. The official CPC/IRI outlook calls for a transition from La Niña to neutral conditions during the March-May season, with a further warming tendency later in the year. The latest forecasts of statistical and dynamical models support this scenario.

Indian Ocean State

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

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 2nd – 8th May: Total rainfall between 65-75 mm in Ratnapura, Kalutara, Galle and Matara districts; between 55-65 mm in Colombo and Hambantota districts; between 45-55 mm in Kegalle, Nuwara Eliya and Monaragala districts; between 35-45 mm in Gampaha, Kegalle, Kandy, Badulla and Ampara districts; between 25-35 mm in Puttalam and Kurunegala districts; between 15-25 mm in Matale and Batticaloa districts; between 5-15 mm in Polonnaruwa and Anuradhapura districts; Up to 5 mm total rainfall rest of the island.

From 9th – 15th May: Total rainfall between 125-135 mm in Galle district; between 115-125 mm in Kalutara and Matara districts; between 105-115 mm in Ratnapura and Hambantota districts; between 85-95 mm in Colombo, Kegalle and Monaragala districts; between 75-85 mm in Gampaha and Nuwara Eliya districts; between 65-75 mm in Kandy, Badulla and Ampara districts; between 45-55 mm in Puttalam, Kurunegala and Batticaloa districts; between 35-45 mm in Matale district; Up to 35 mm total rainfall rest of the island.

IMD WRF Forecast:

Not Available

IRI Model Forecast:

From 2nd -7th May: Total rainfall between 75-100 mm in Badulla district; between 50-75 mm in Matale, Kandy, Nuwara Eliya and Monaragala districts; between 25-50 mm in Trincomalee, Polonnaruwa, Batticaloa, Ampara, Hambantota, Ratnapura, Kegalle and Kurunegala districts; Up to 25 mm total rainfall rest of the island.

MJO based OLR predictions

For the next 15 days:

MJO shall suppress 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/>

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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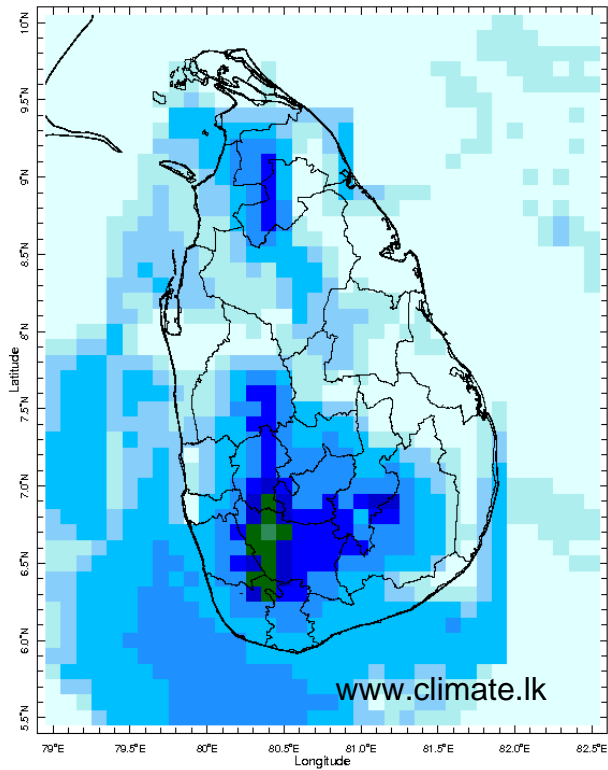
2. Predictions

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- b. WRF Model Rainfall Forecast from IMD Chennai
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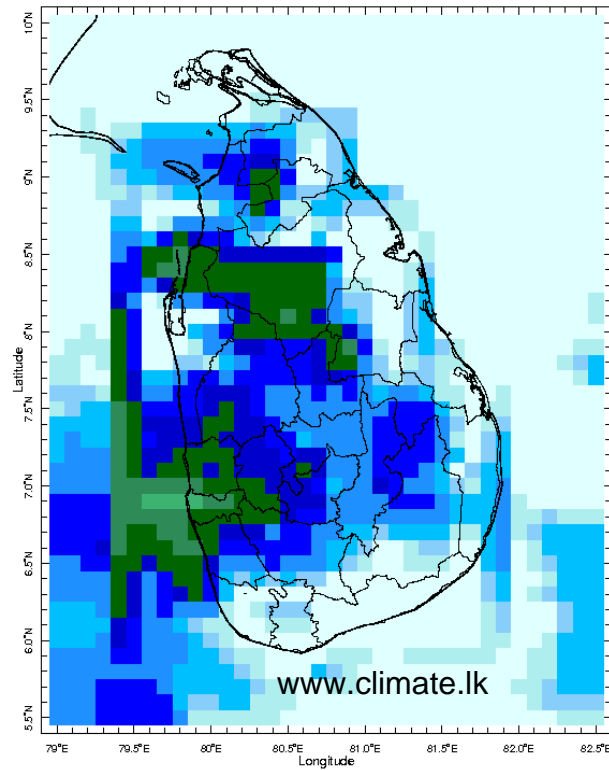
MONITORING

Daily Rainfall Monitoring

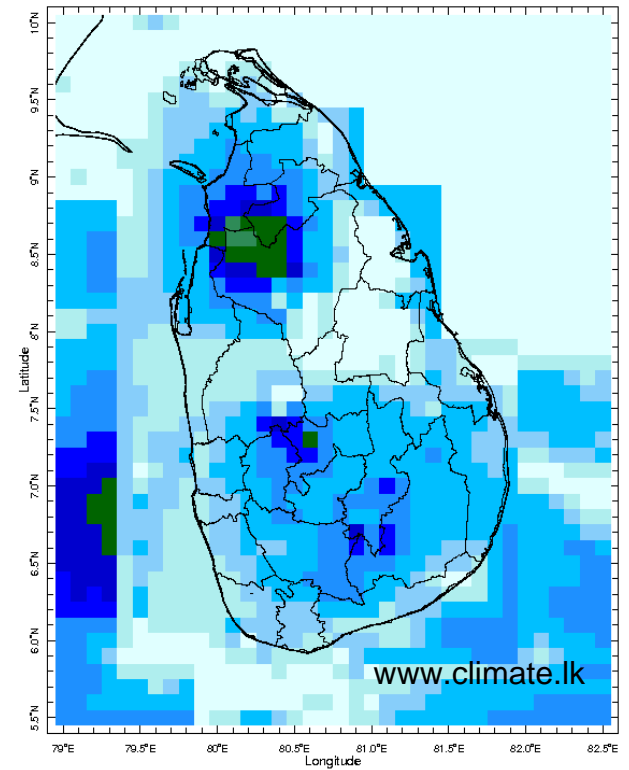
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



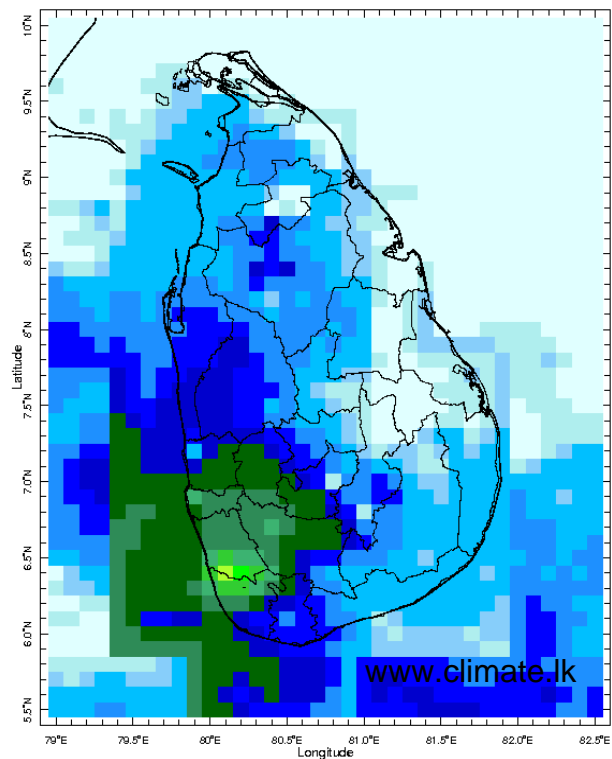
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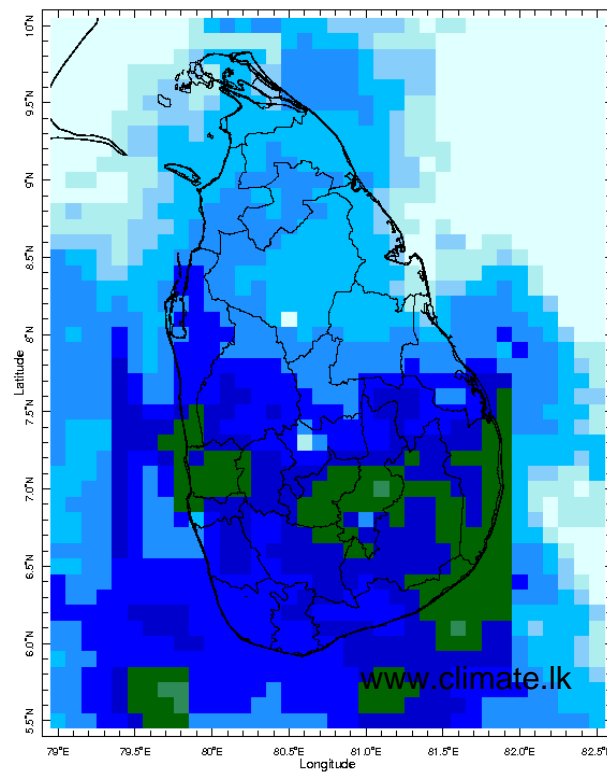
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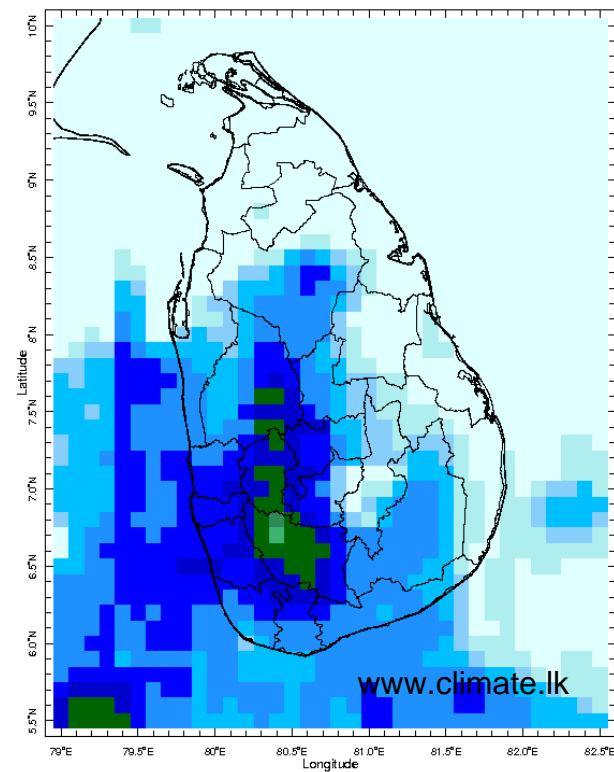
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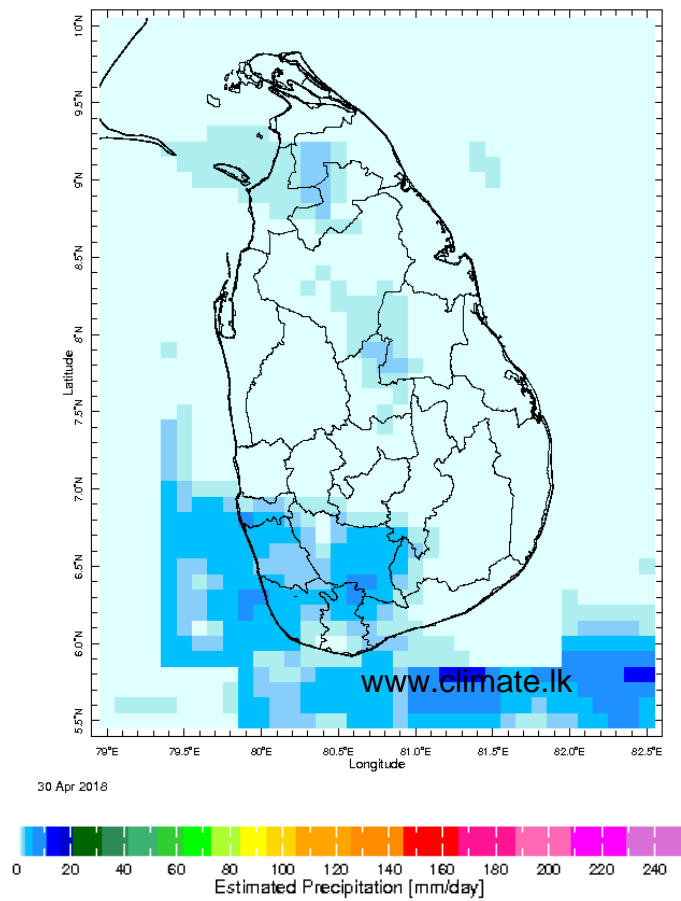
27 Apr 2018



28 Apr 2018

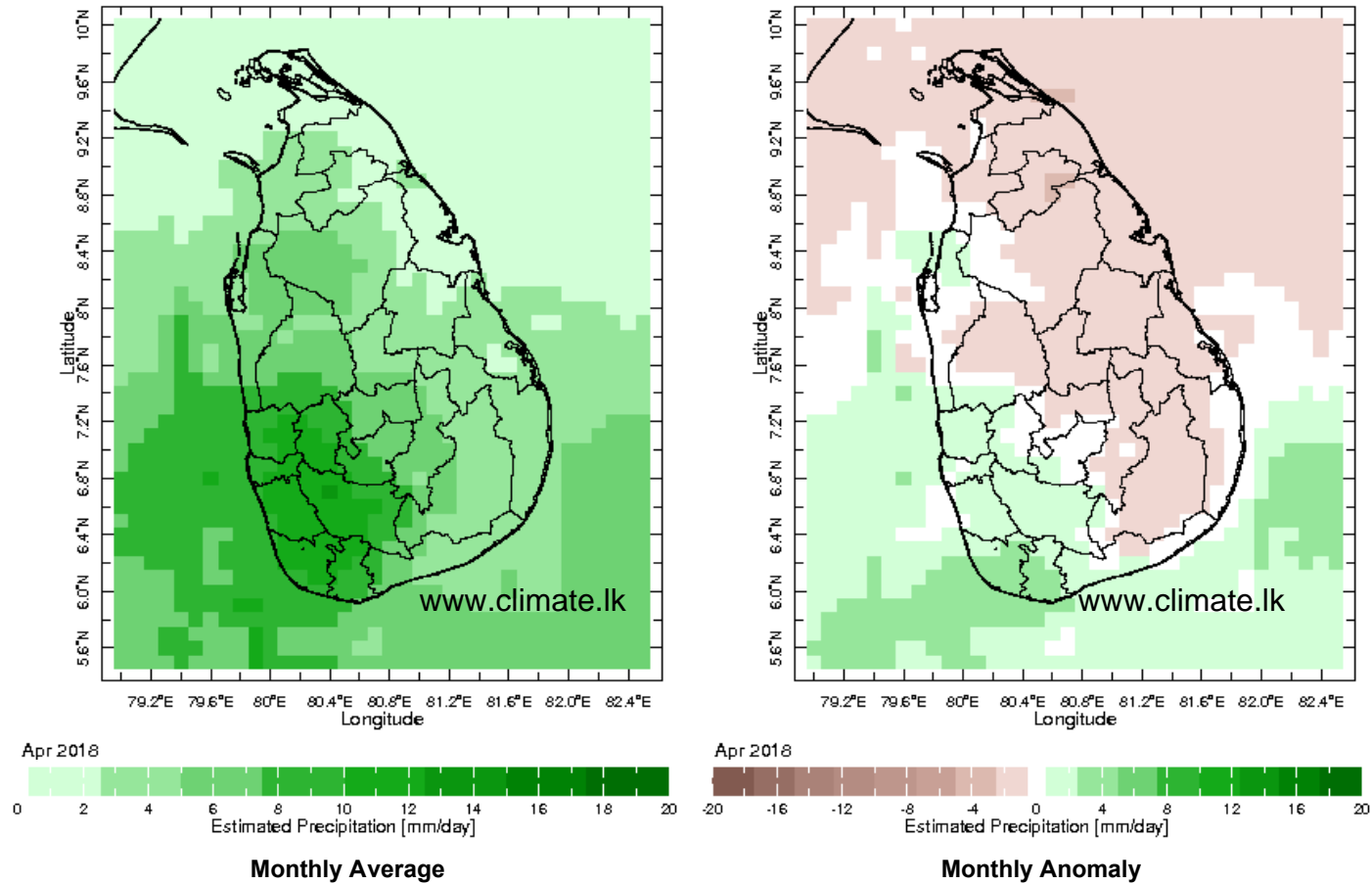


29 Apr 2018

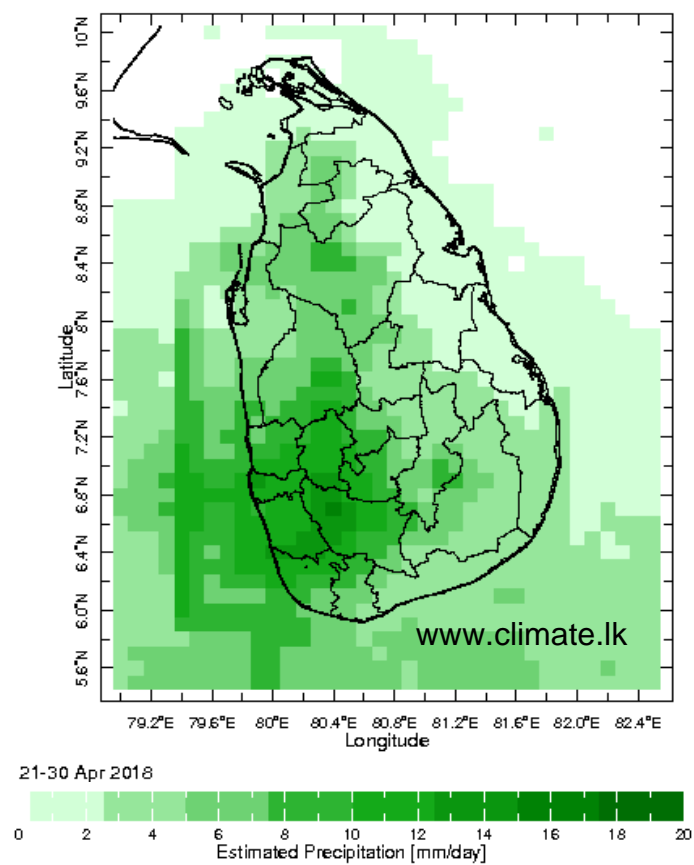
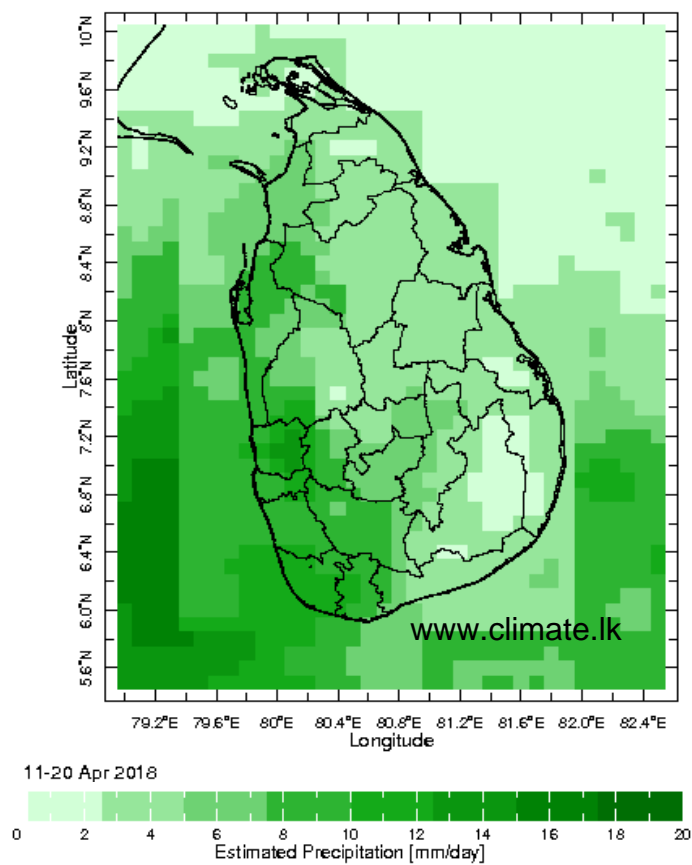


Monthly Rainfall Monitoring

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

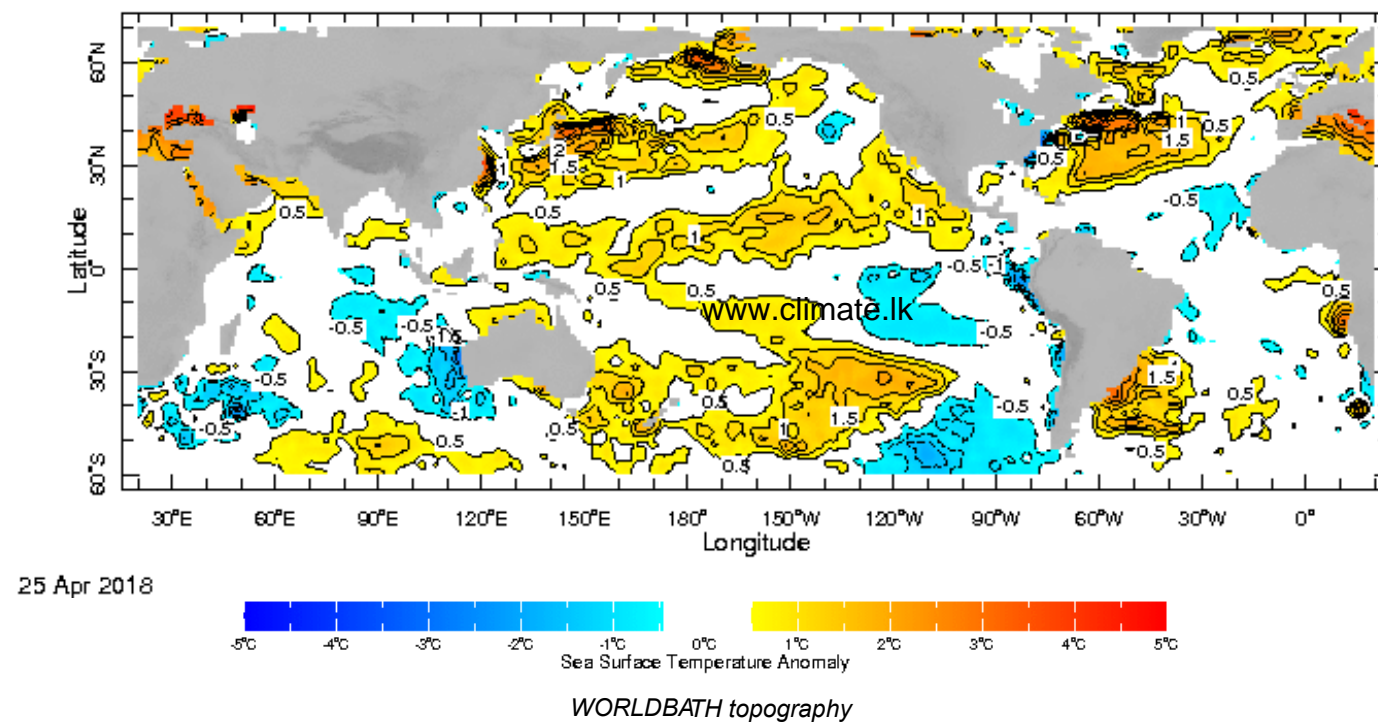


Dekadal (10 Day) Satellite Derived Rainfall Estimates



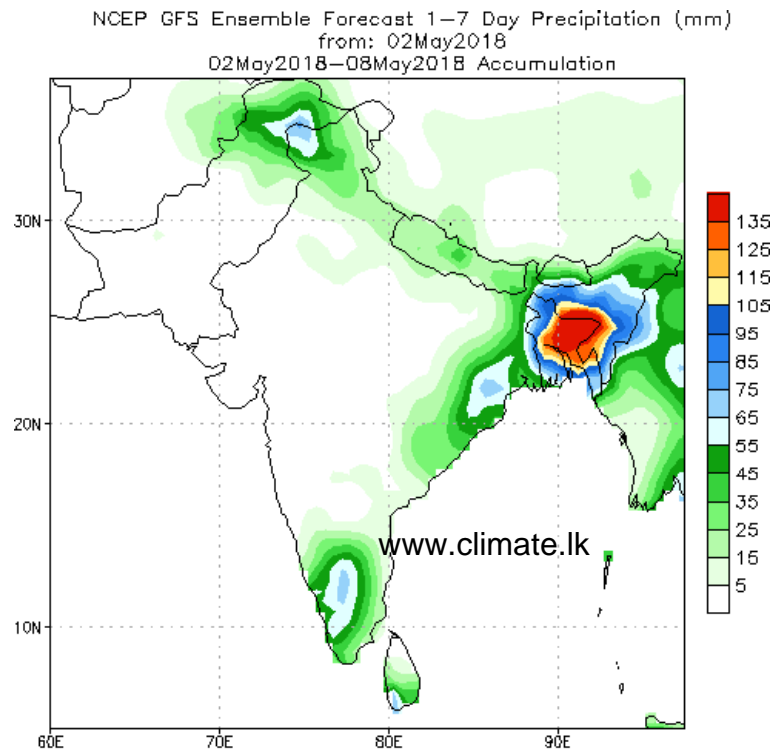
Weekly Average SST Anomalies

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

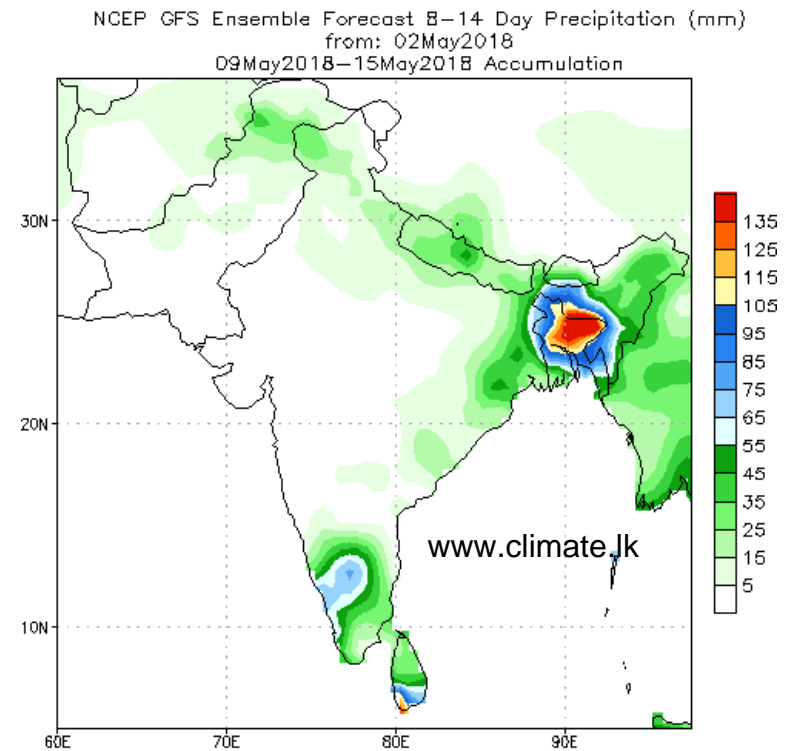


PREDICTIONS

NCEP GFS 1 - 14 Day prediction



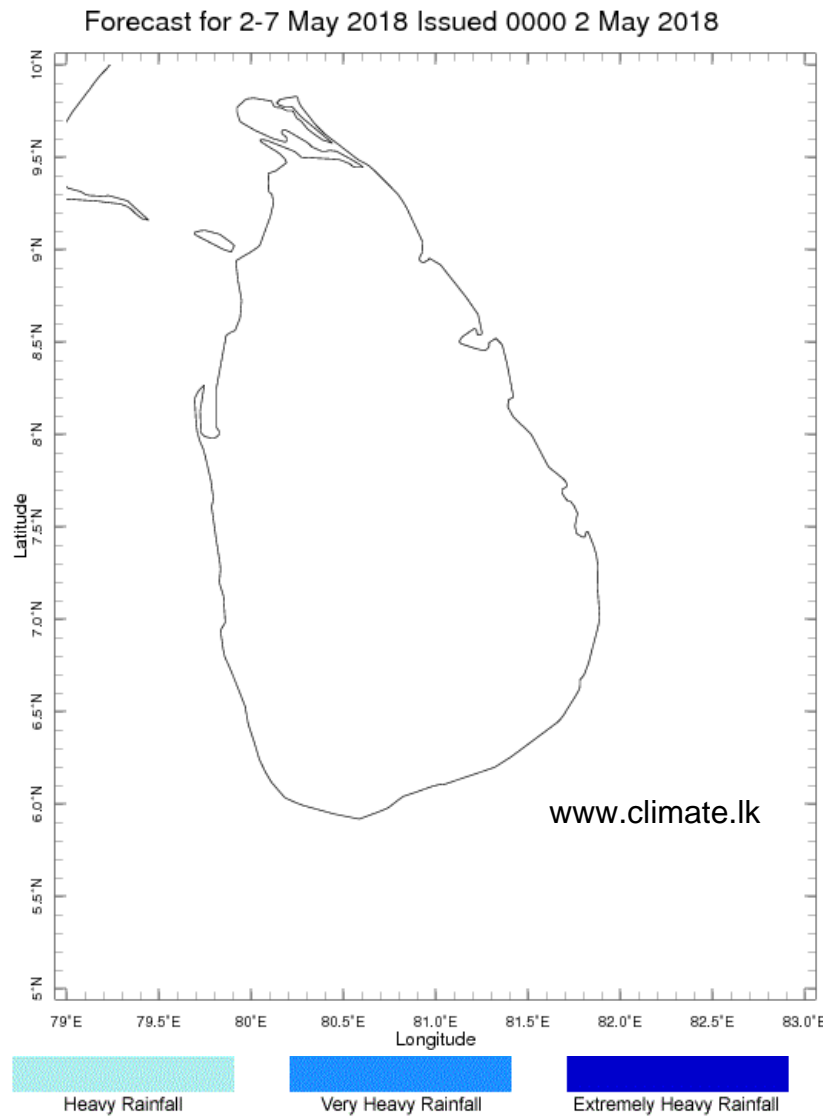
Bias correction based on last 30-day forecast error



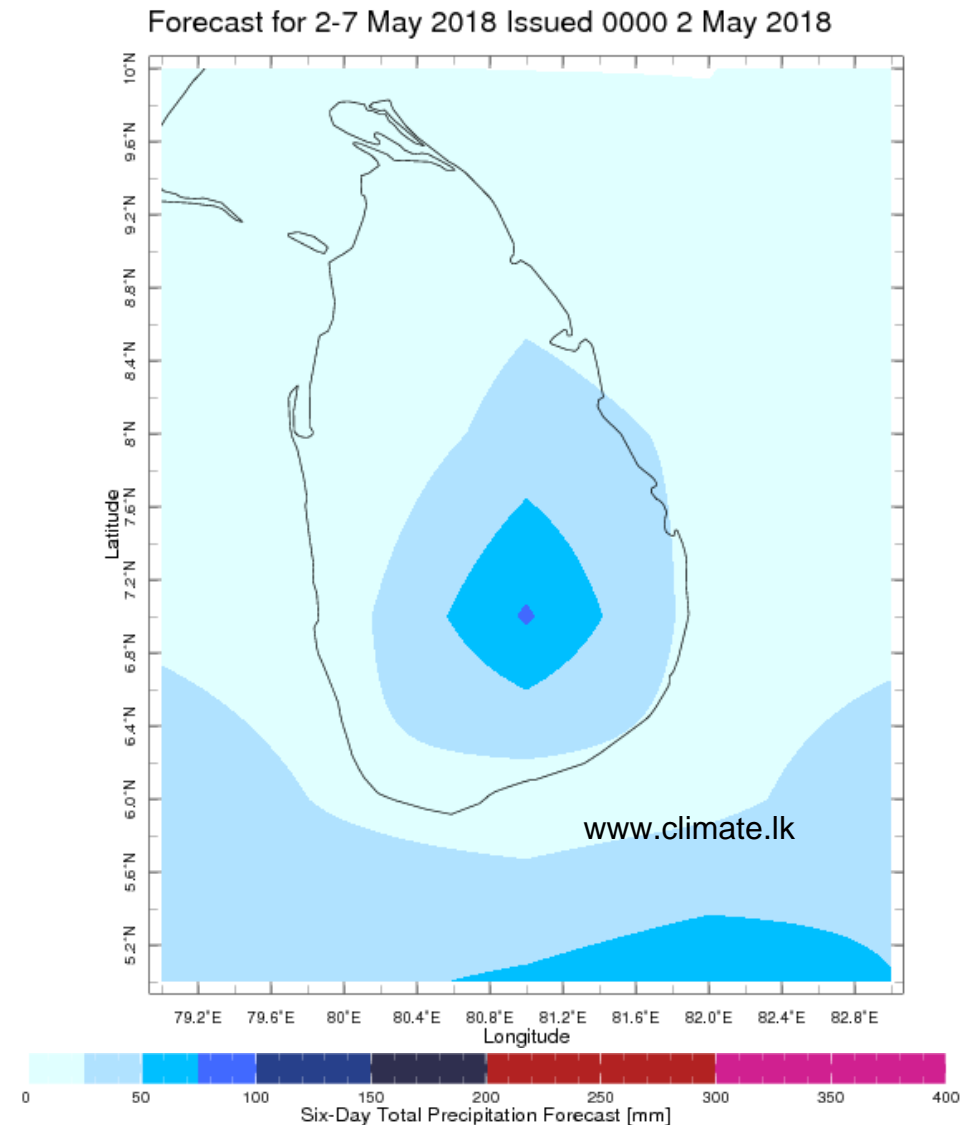
Bias correction based on last 30-day forecast error

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.



Extreme Rainfall Forecast



Total Six Day Precipitation Forecast