

Experimental Climate Monitoring and Prediction

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Highlights

- The IRI Model predicts total rainfall between 50-75 mm in Batticaloa and Ampara districts during 24th -29th Jan.
- Between 17-21 Jan: No significant rainfalls were recorded in any part of the island.
- From 14-20 Jan: minimum temperature of 15 °C was recorded from Nuwara Eliya district while western and southern parts of the island recorded a maximum temperature between 30-35 °C.
- From 16-22 Jan: up to 18 km/h, northeasterly winds were experienced by the entire island.
- 0.5 °C below average sea surface temperature was observed in the northern seas of Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: No significant rainfalls were recorded in any part of the island during 17th- 21st Jan. On January 22nd several regions of Nuwara Eliya, Batticaloa and Monaragala districts received up to 10 mm of rainfall. On the 23rd, Kurunegala, Anuradhapura, Matale and Polonnaruwa districts received up to 10 mm of rainfall.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 5-10 mm in Kurunegala, Anuradhapura, Batticaloa, Ratnapura, Badulla and Monaragala districts. It also shows below average rainfall up to 10-25 mm in Mullaitivu, Vavuniya, Trincomalee, Anuradhapura, Batticaloa, Ampara, Nuwara Eliya, Kalutara and Galle districts.

Monthly Monitoring: During December - below average rainfall conditions were experienced by the entire island except for several regions of Ratnapura, Badulla, Monaragala and Hambantota districts. Mullaitivu, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Batticaloa and Ampara districts received up to 180 mm below average rainfall; and Gampaha, Jaffna, Kilinochchi, Mannar, Puttalam, Kurunegala, Kandy and Galle districts received up to 150 mm. The CPC Unified Precipitation Analysis tool shows ~300 mm of total rainfall in Badulla, Monaragala and Ratnapura districts; up to ~200 mm in Nuwara Eliya and Ratnapura districts; and Anuradhapura, Puttalam, Kurunegala, Gampaha, Kegalla, Matale, Galle, Matara, Polonnaruwa, Trincomalee and Ampara districts up to 100 mm.

Ocean State (Text Courtesy IRI)

Pacific sea state: January 19, 2018

In mid-January 2018, the tropical Pacific reflected La Niña conditions, with SSTs in the east-central tropical Pacific in the range of weak to moderate La Niña and most atmosphere variables showing patterns suggestive of La Niña conditions. The collection of latest ENSO prediction models indicates weak La Niña continuing through the Northern Hemisphere winter and early spring, followed by a return to neutral conditions during spring. This scenario is consistent with the official CPC/IRI outlook, which continues its La Niña advisory.

Indian Ocean State

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

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 24th Jan – 30th Jan: Total rainfall between 45-55 mm in Ampara, Monaragala and Hambantota districts; between 35-45 mm in Badulla, Batticaloa, Nuwara Eliya and Ratnapura districts; between 25-35 mm in Matara, Kandy, Matale and Polonnaruwa districts; between 15-25 mm in Trincomalee, Anuradhapura, Kurunegala, Kegalle, Colombo and Galle districts; Up to 15 mm total rainfall rest of the island.

From 31st Jan – 06th Feb: Total rainfall between 25-35 mm in Kalutara, Galle, Matara, Hambantota and Ratnapura districts; between 15-25 mm in Gampaha, Colombo, Kegalle, Kandy, Nuwara Eliya, Badulla, Ampara and Monaragala districts; between 5-15 mm in Puttalam, Kurunegala and Matale districts; Up to 5 mm total rainfall rest of the island.

IMD WRF Forecast:

26th Oct: Up to 7.6 mm of rainfall in Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura, Trincomalee, Ampara and Monaragala districts; Up to 2.5 mm in Mannar, Puttalam, Kurunegala, Polonnaruwa, Batticaloa, Gampaha and Colombo districts.

27th Oct: Up to 7.6 mm of rainfall in Kilinochchi, Mullaitivu, Vavuniya and Anuradhapura districts; Up to 2.5 mm in Jaffna, Mannar, Puttalam, Kurunegala, Matale, Kandy, Gampaha, Colombo, Kalutara, Hambantota and Badulla districts.

IRI Model Forecast:

24th – 29th Jan: Total rainfall between 50-75 mm in Batticaloa and Ampara districts; between 25-50 mm in Mullaitivu, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Ampara, Hambantota, Monaragala, Badulla, Ratnapura, Nuwara Eliya, Kandy, Matale, Gampaha, Colombo and Kalutara 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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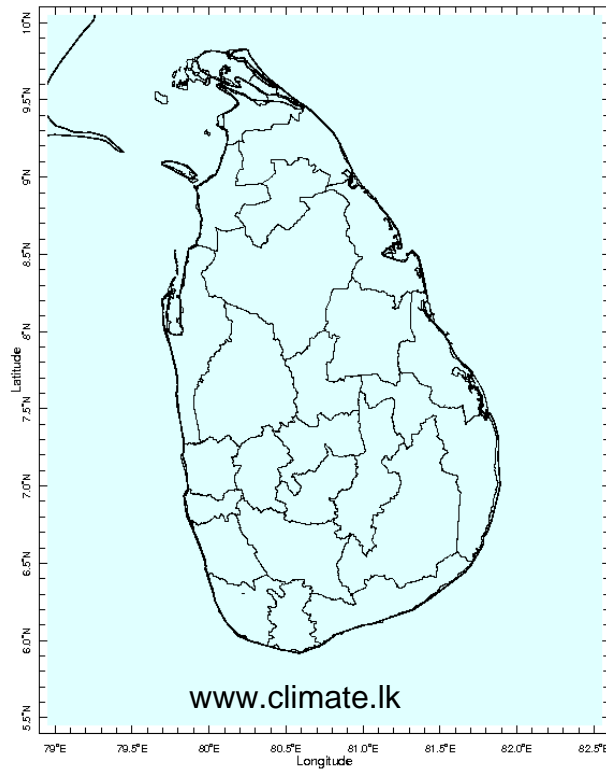
2. Predictions

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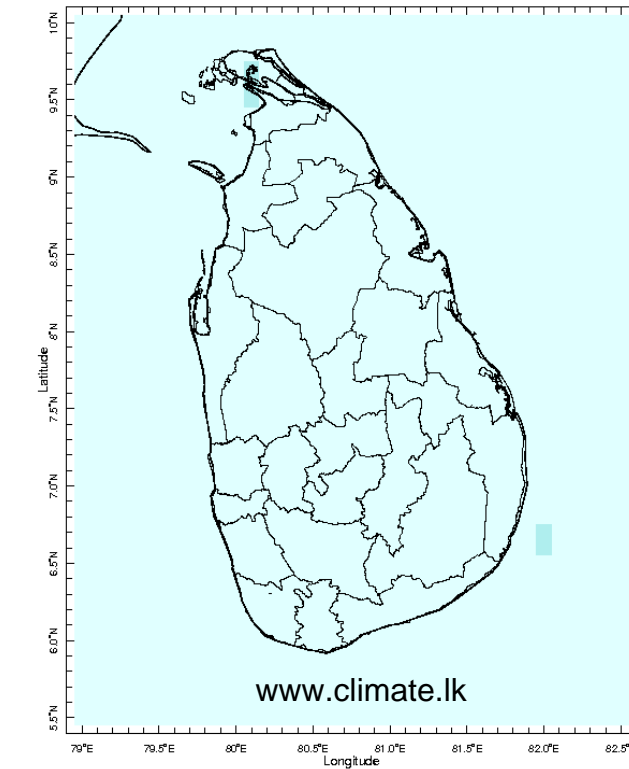
MONITORING

Daily Rainfall Monitoring

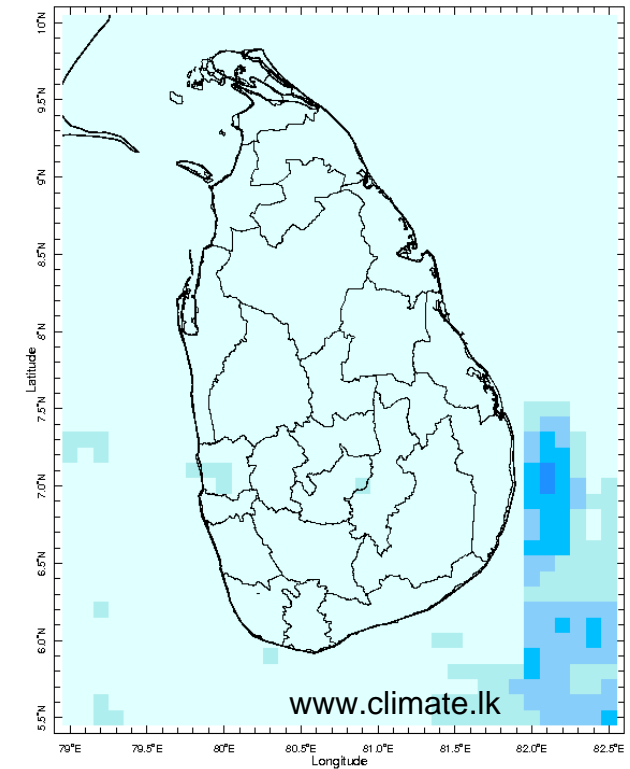
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



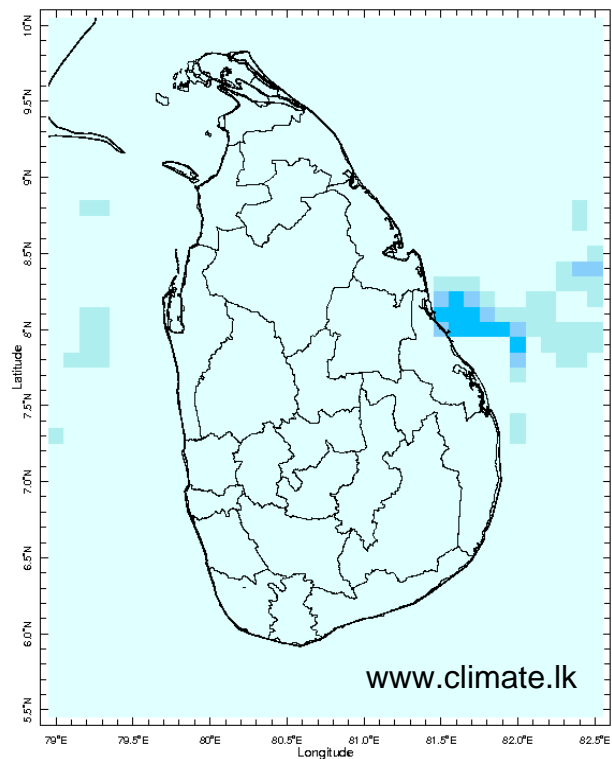
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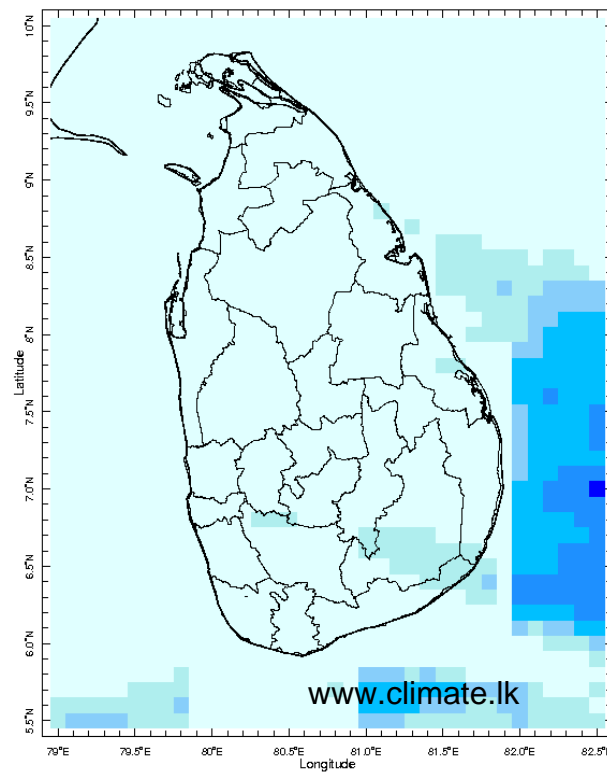
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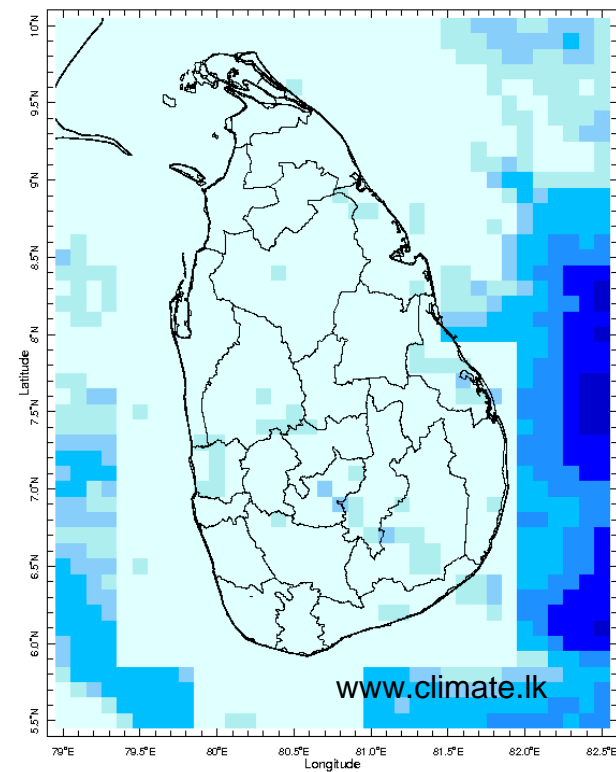
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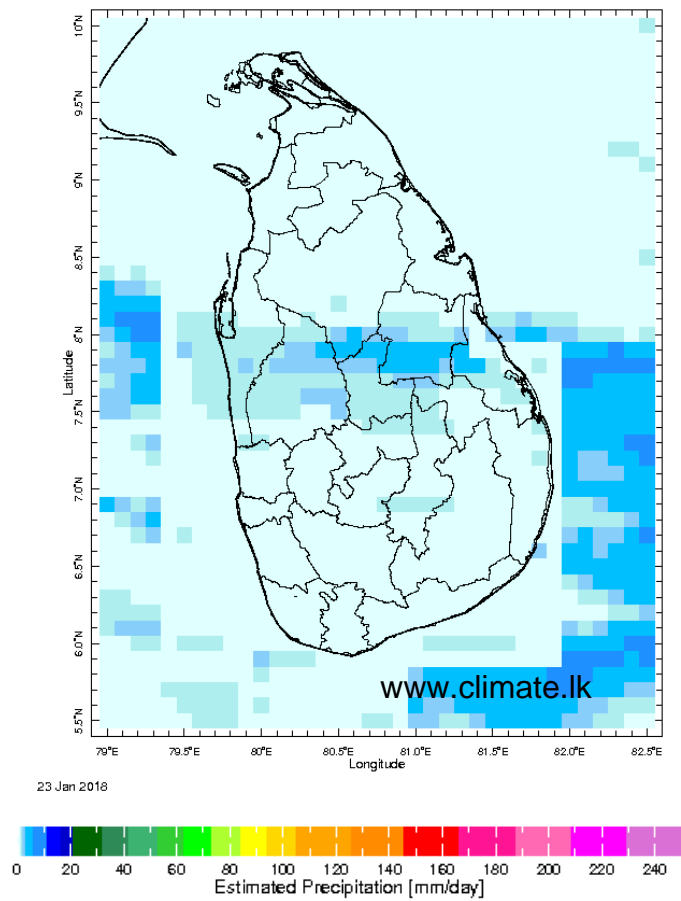
20 Jan 2018



21 Jan 2018

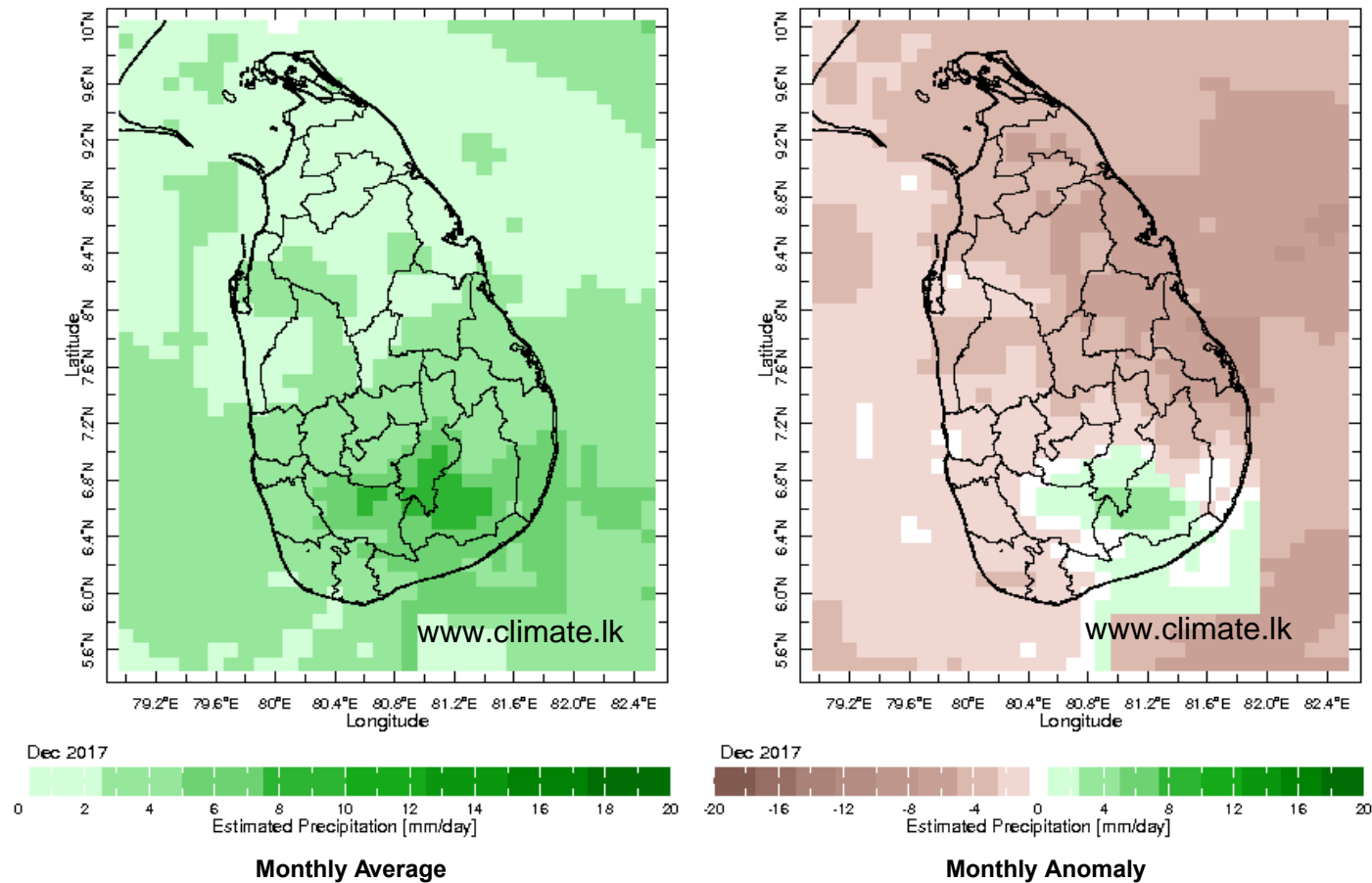


22 Jan 2018

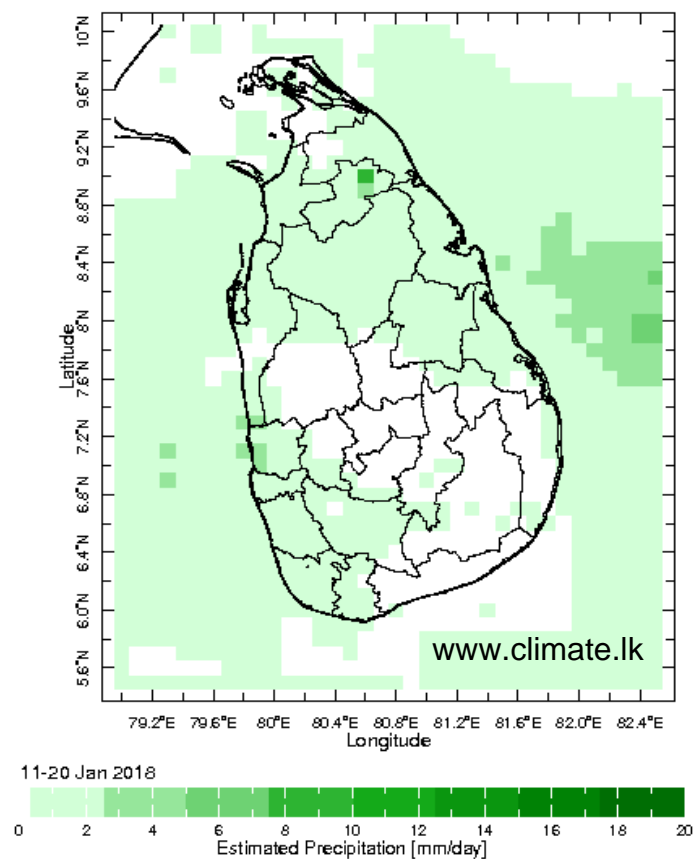
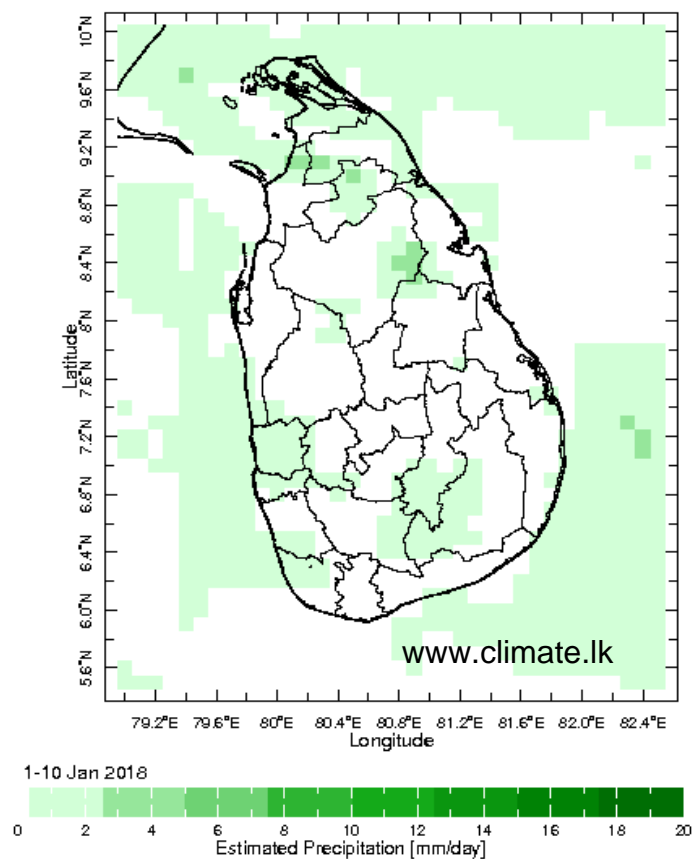


Monthly Rainfall Monitoring

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

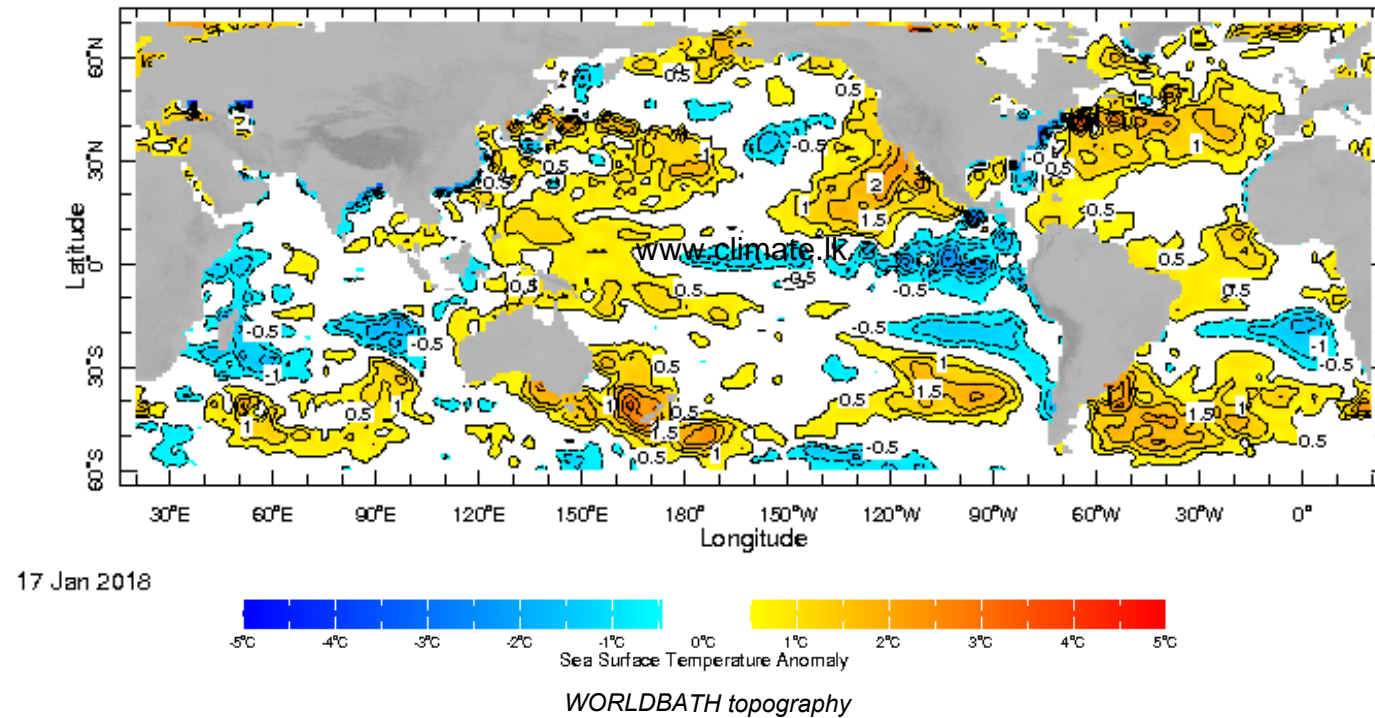


Dekadal (10 Day) Satellite Derived Rainfall Estimates



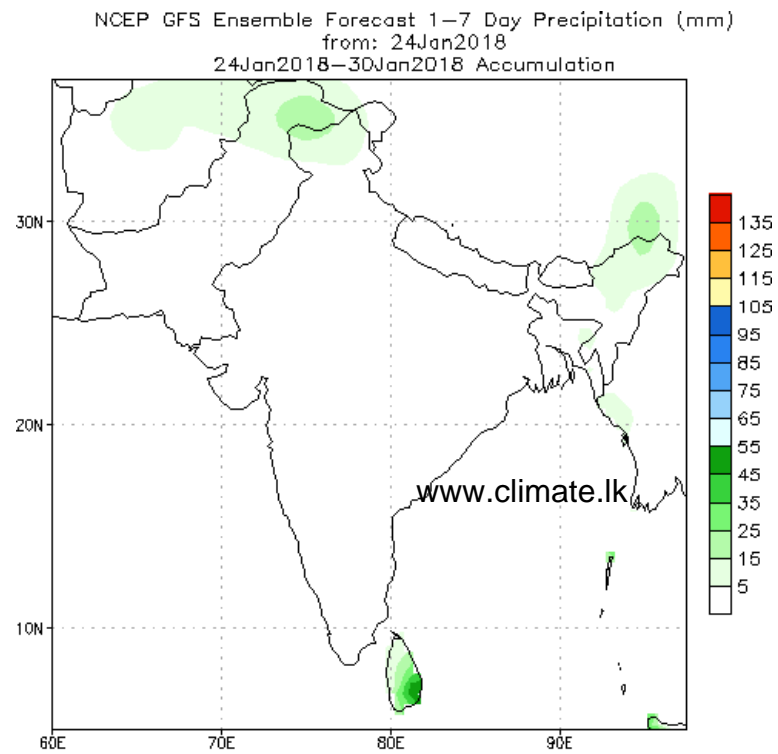
Weekly Average SST Anomalies

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

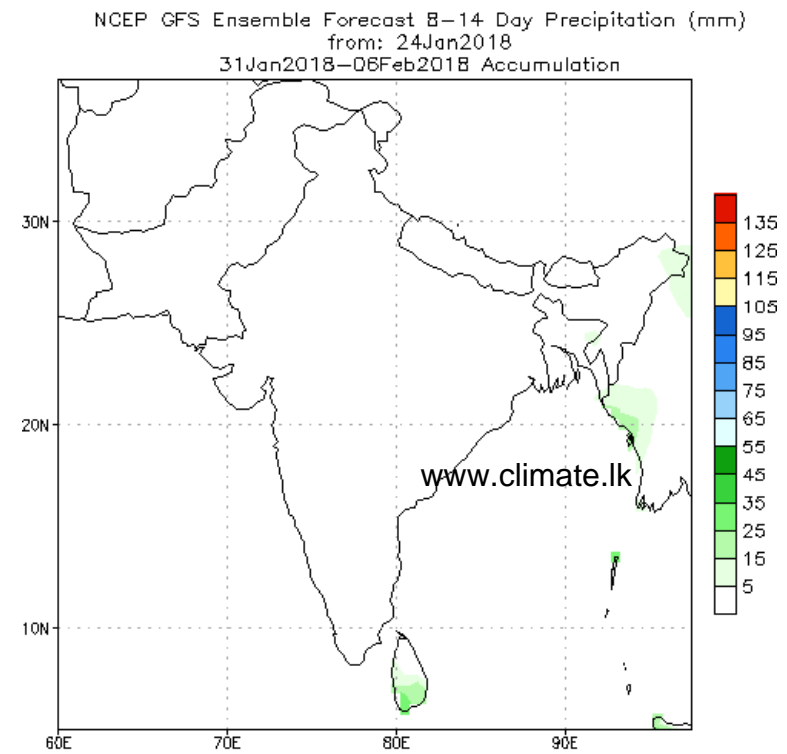


PREDICTIONS

NCEP GFS 1- 14 Day prediction



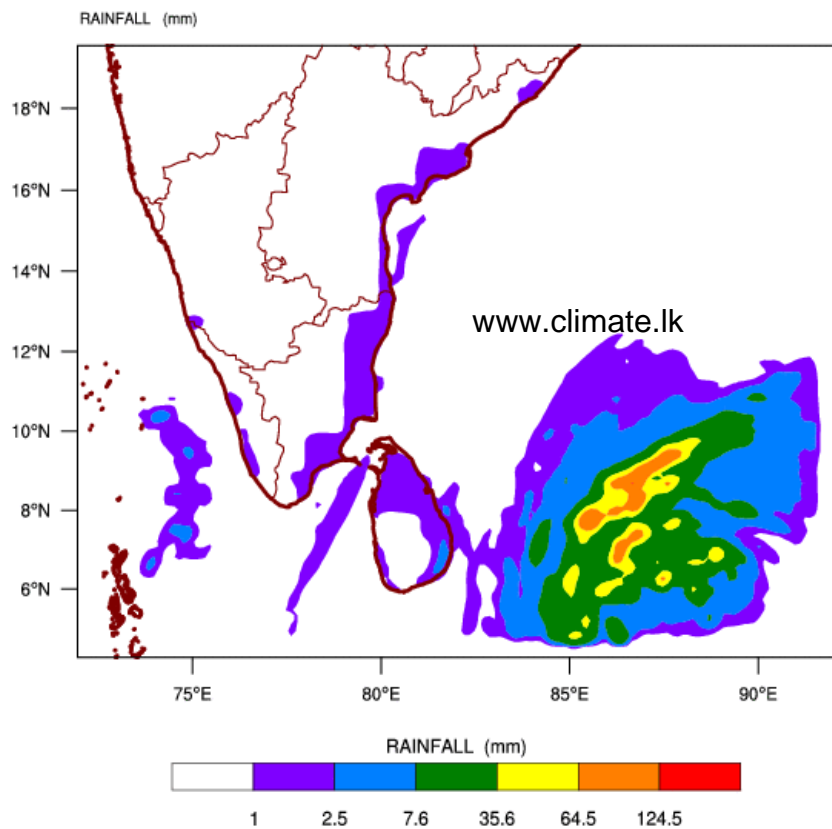
Bias correction based on last 30-day forecast error



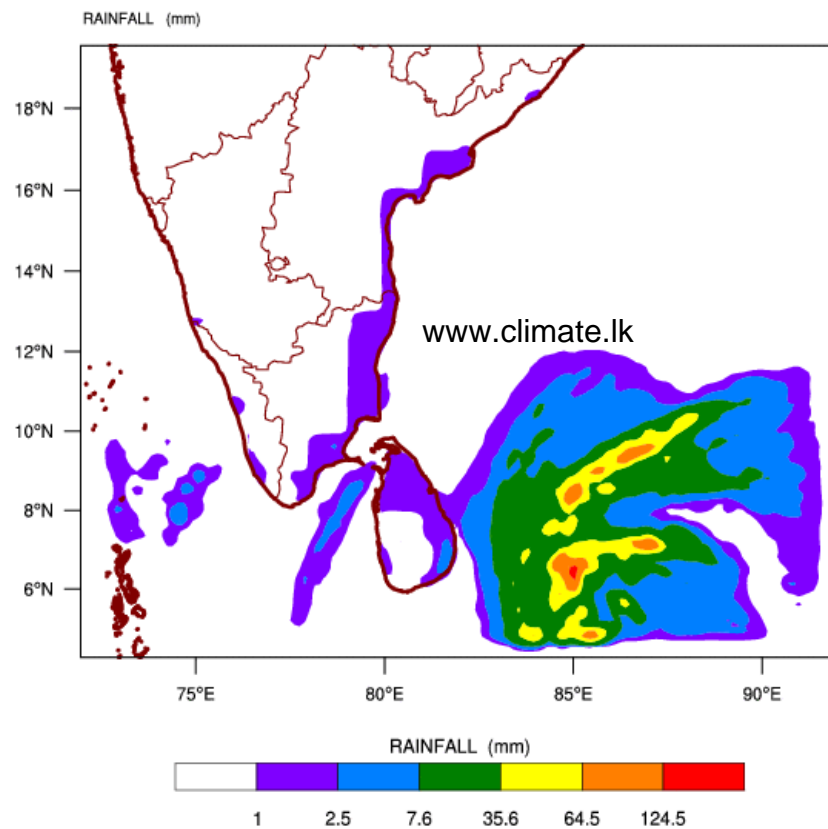
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 25-01-2018 valid for 03 UTC of 27-01-2018

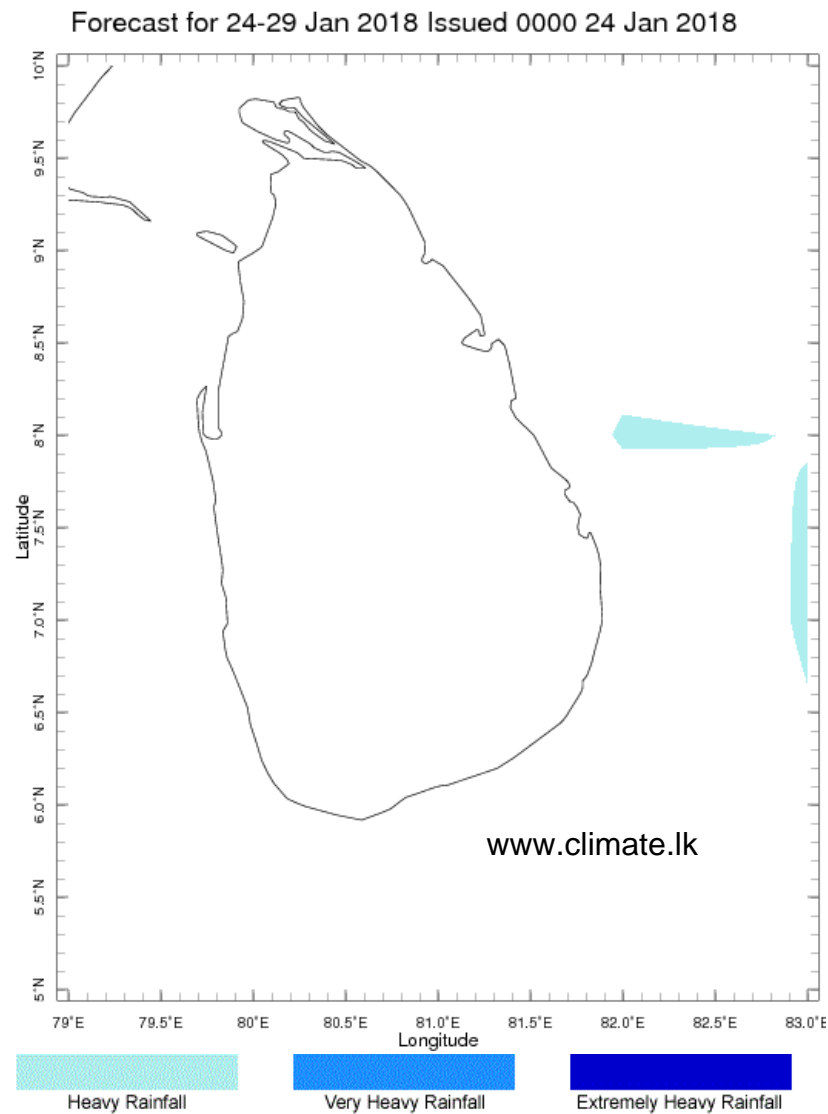


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 25-01-2018 valid for 03 UTC of 28-01-2018

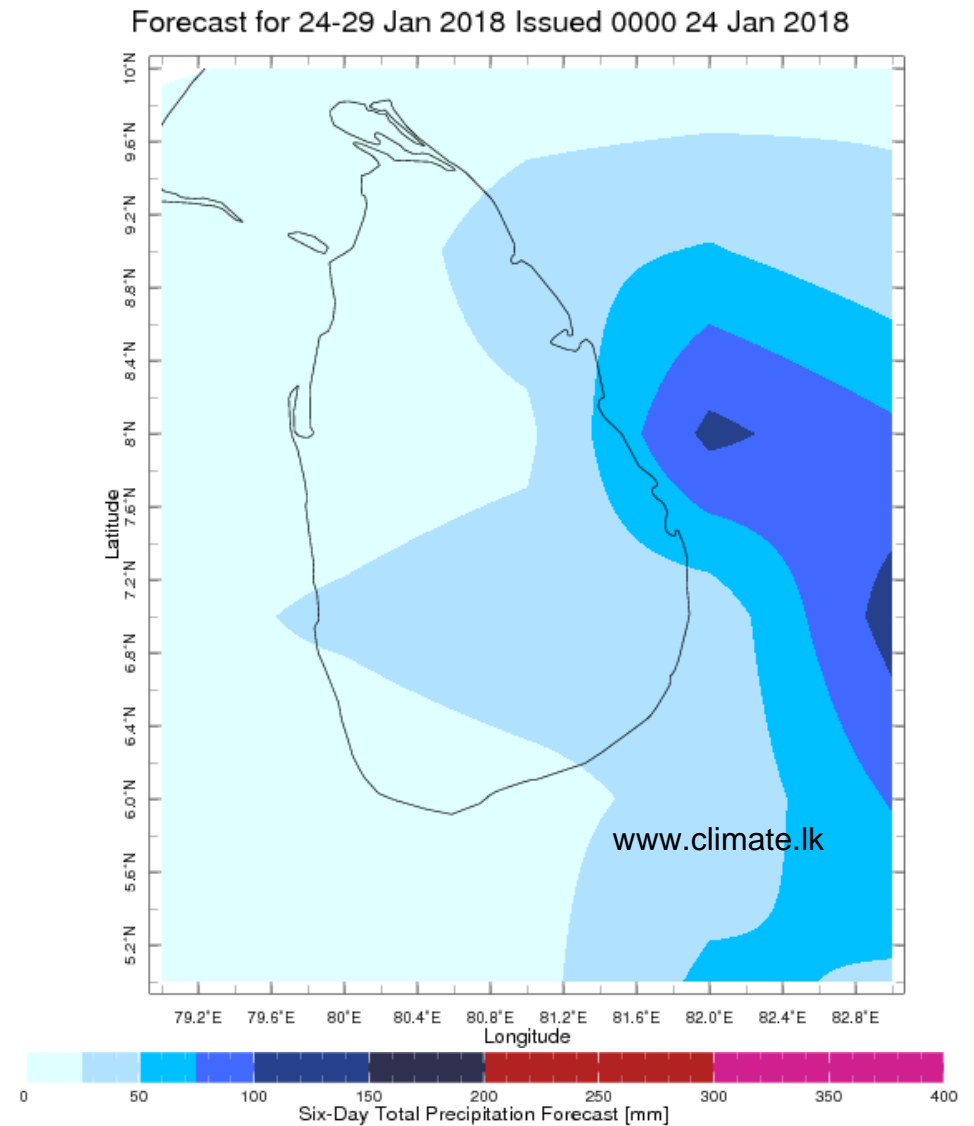


Weekly Rainfall Forecast from IRI

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