

Experimental Climate Monitoring and Prediction

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Highlights

- The NCEP weekly forecast predicts rainfall between 35-45 mm in Monaragala and Badulla districts during 23rd -29th Jan.
- Between 10-16 Jan: Rainfall up to 90 mm was recorded in Vavuniya district on January 11th.
- From 7-13 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 9-15 Jan: up to 30 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: On January 10th Gampaha, Colombo, Kalutara, Kegalla and Galle districts received up to 20 mm of rainfall; and several regions of Ratnapura, Nuwara Eliya, Kurunegala, Anuradhapura, Polonnaruwa, Batticaloa and Ampara districts up to 10 mm. On the 11th, Nainamadu region in Vavuniya district received up to 90 mm of rainfall; and Jaffna, Kilinochchi, Mullaitivu, Trincomalee, Anuradhapura, Polonnaruwa, Batticaloa, Ampara, Nuwara Eliya, Badulla and Monaragala districts up to 10 mm. On the 12th, Puttalam district received up to 50 mm of rainfall; Gampaha and Anuradhapura districts up to 30 mm; Mannar and Colombo districts up to 20 mm; and Vavuniya, Mullaitivu, Trincomalee, Kalutara, Galle, Kegalla and Ratnapura districts up to 10 mm. On the 13th, Colombo, Galle, Matara and Ratnapura districts received up to 10 mm of rainfall. No significant rainfalls were recorded in any part of the island during 14th- 16th Jan.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall of 75-100 mm in Vavuniya district; up to 25-50 mm in Kurunegala, Gampaha and Colombo districts; and up to 10-25 mm in Mannar, Anuradhapura, Trincomalee, Polonnaruwa, Kurunegala, Ratnapura, Kalutara, Galle and Matara districts. It also shows below average rainfall up to 50-100 mm in Ampara district; up to 25-50 mm in Batticaloa, Matale, Kandy, Nuwara Eliya, Badulla, Monaragala and Hambantota districts; and up to 10-25 mm in most parts of the island.

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 11, 2018

In early 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, but not far from threshold of moderate, La Niña as the most likely scenario for the Northern Hemisphere winter, followed by a return to neutral conditions during spring. This scenario is consistent with the official CPC/IRI outlook, which continues a 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 18th – 22th Jan: Total rainfall between 5-15 mm in Monaragala and Badulla districts; Up to 5 mm total rainfall rest of the island.

From 23rd – 29th Jan: Total rainfall between 35-45 mm in Monaragala and Badulla districts; between 25-35 mm in Ampara, Kandy, Nuwara Eliya, Ratnapura, Kegalle, Colombo, Gampaha and Puttalam districts; between 15-25 mm in Jaffna, Mannar, Anuradhapura, Trincomalee, Batticaloa, Polonnaruwa, Matale, Kurunegala, Galle, Matara and Hambantota districts; Up to 15 mm total rainfall rest of the island.

IMD WRF Forecast:

19th Jan: Up to 7.6 mm of rainfall in Mullaitivu, Batticaloa, Ampara, Monaragala and Hambantota districts; Up to 2.5 mm in Kilinochchi, Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Trincomalee, Badulla, Colombo and Kalutara districts.

20th Jan: Up to 7.6 mm of rainfall in Mullaitivu, Mannar, Vavuniya, Anuradhapura, Batticaloa, Ampara, Monaragala and Hambantota districts; Up to 2.5 mm in Jaffna, Kilinochchi, Puttalam, Kurunegala, Polonnaruwa, Trincomalee, Badulla, Colombo, Kalutara districts.

IRI Model Forecast:

17th – 22th Jan: Up to 25mm of total rainfall over the island.

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 in the rainfall in the following 5 days.

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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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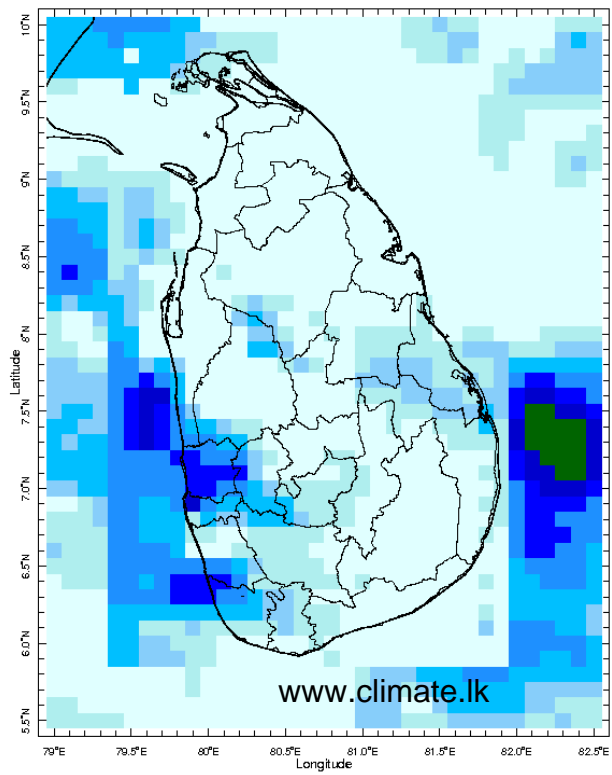
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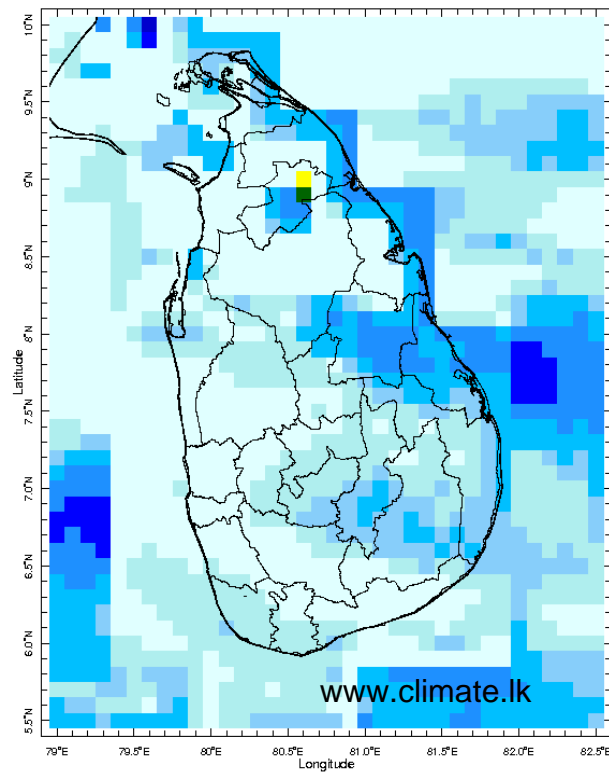
MONITORING

Daily Rainfall Monitoring

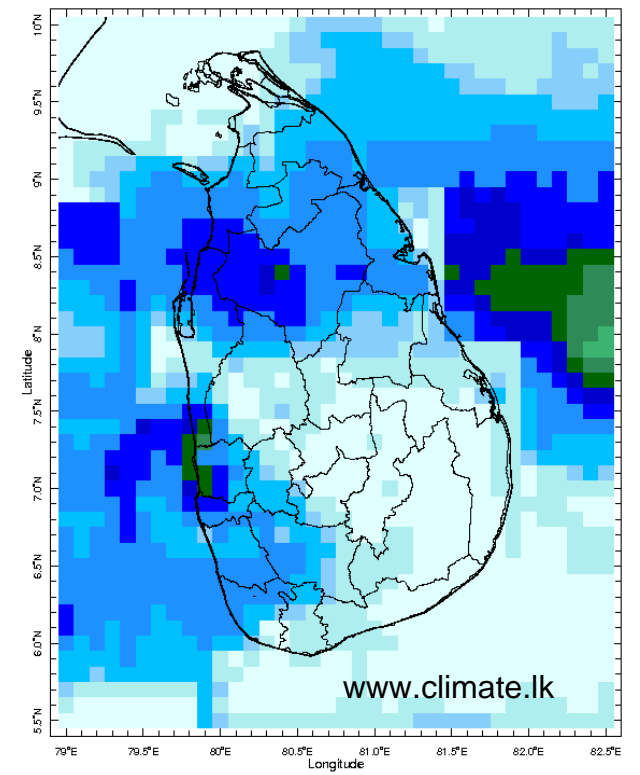
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



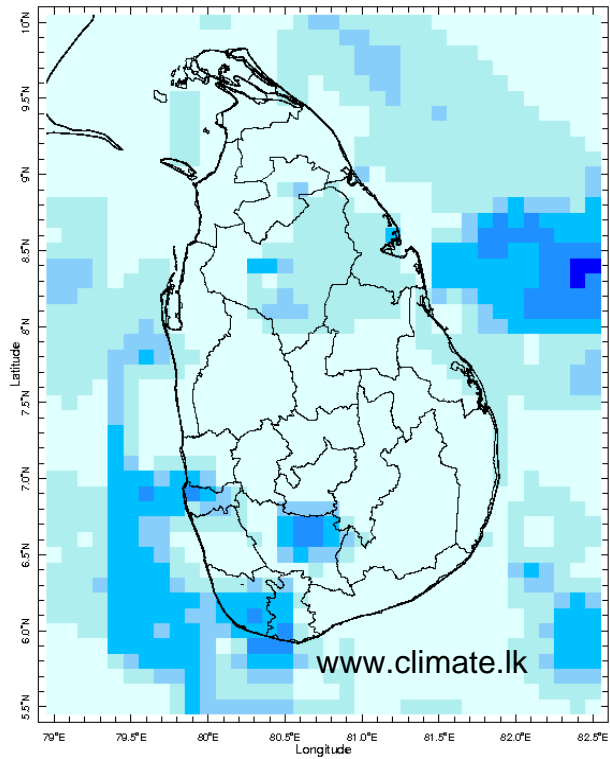
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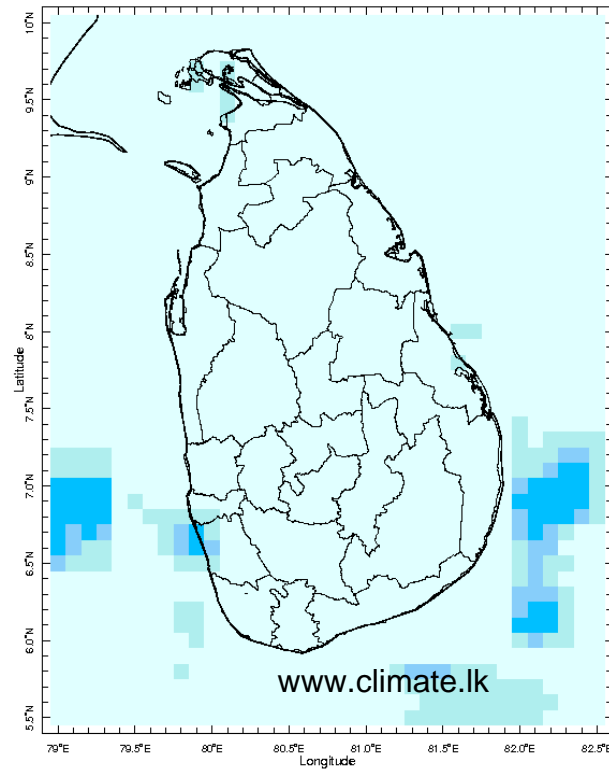
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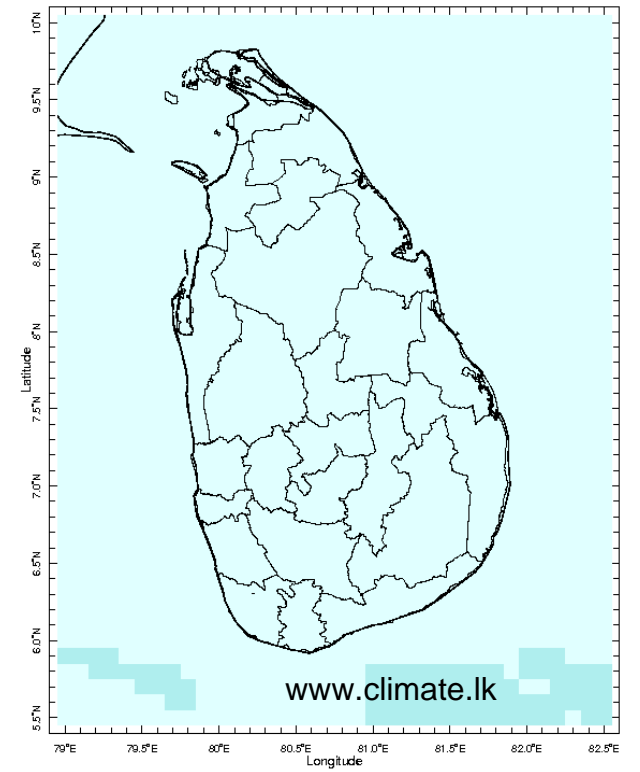
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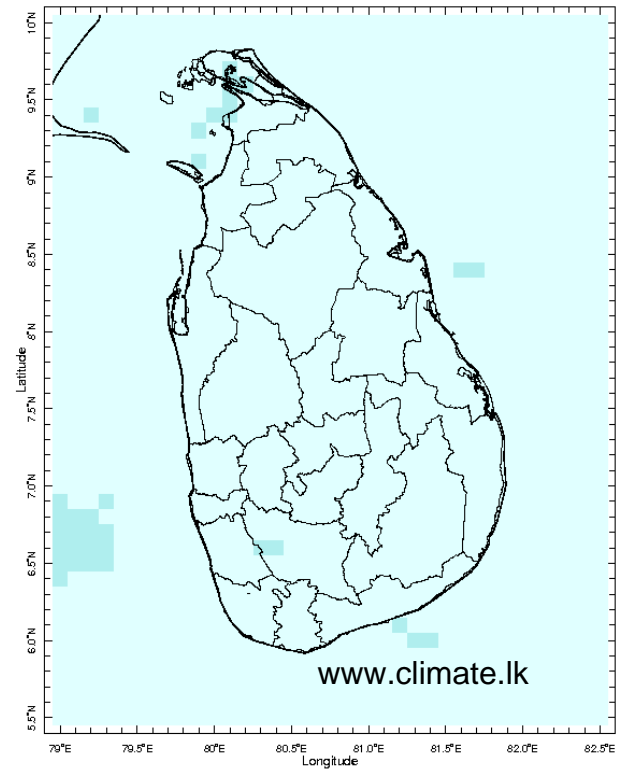
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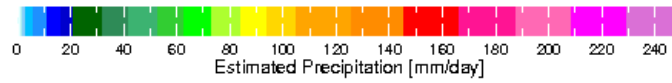
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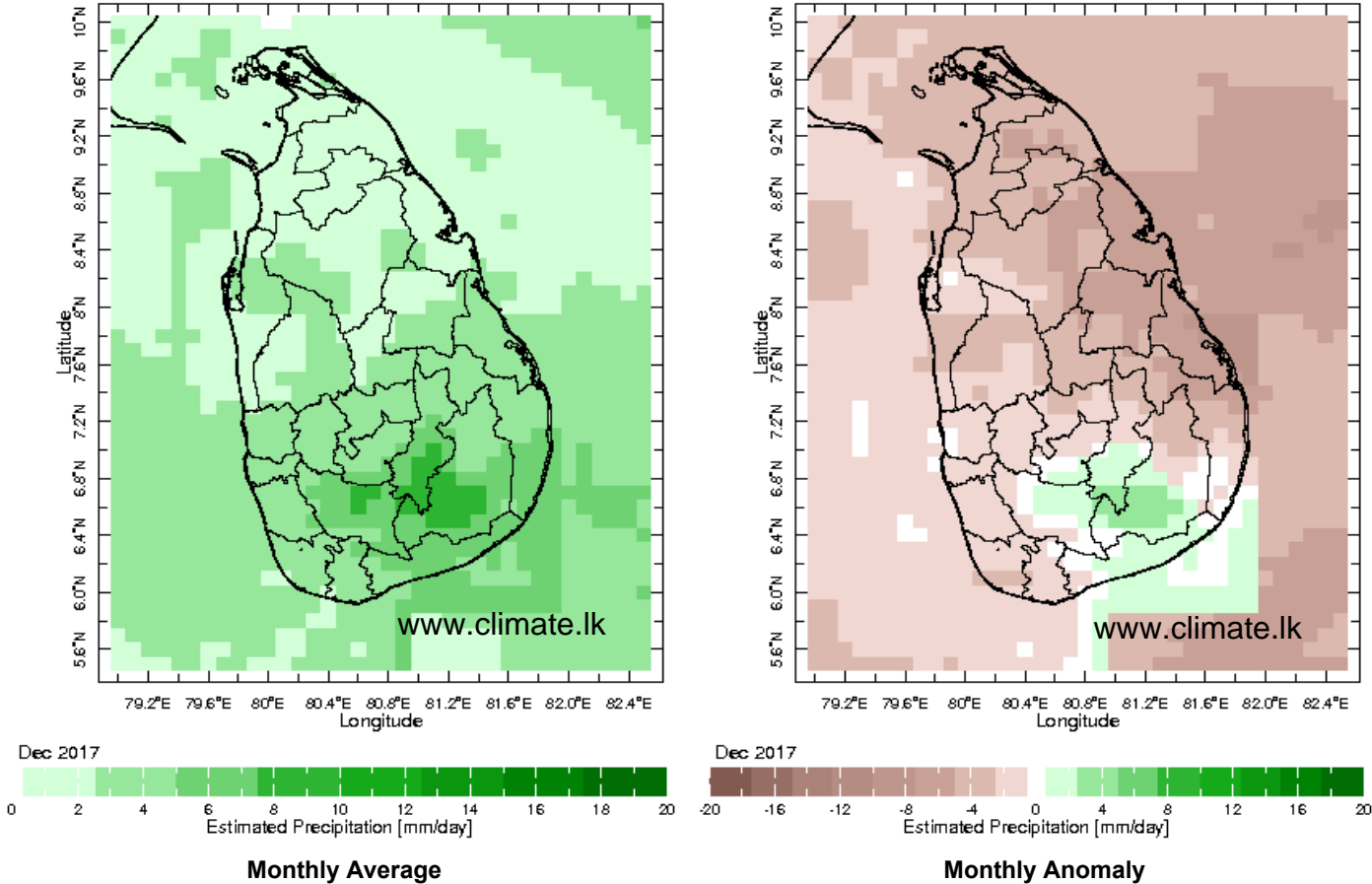


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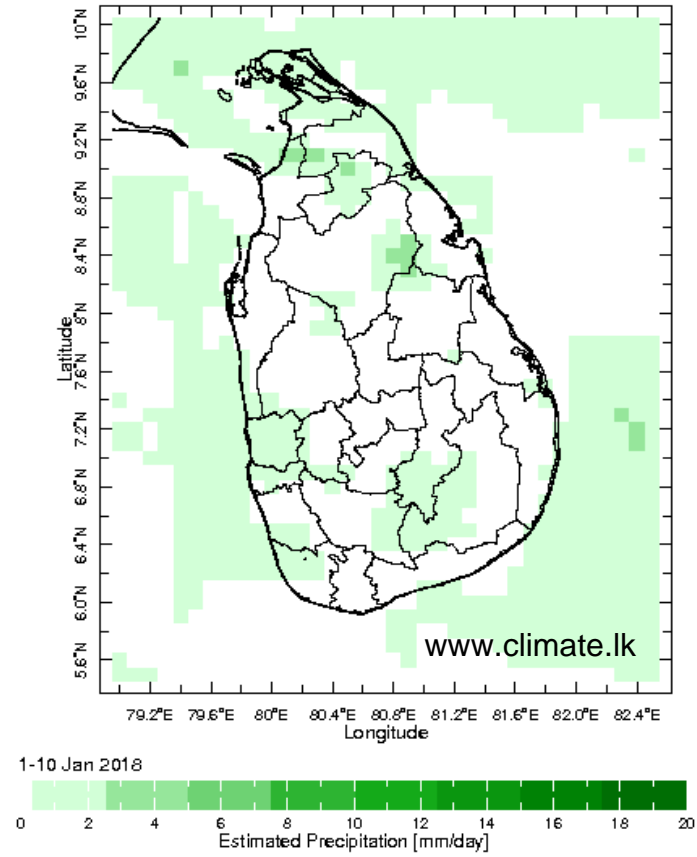
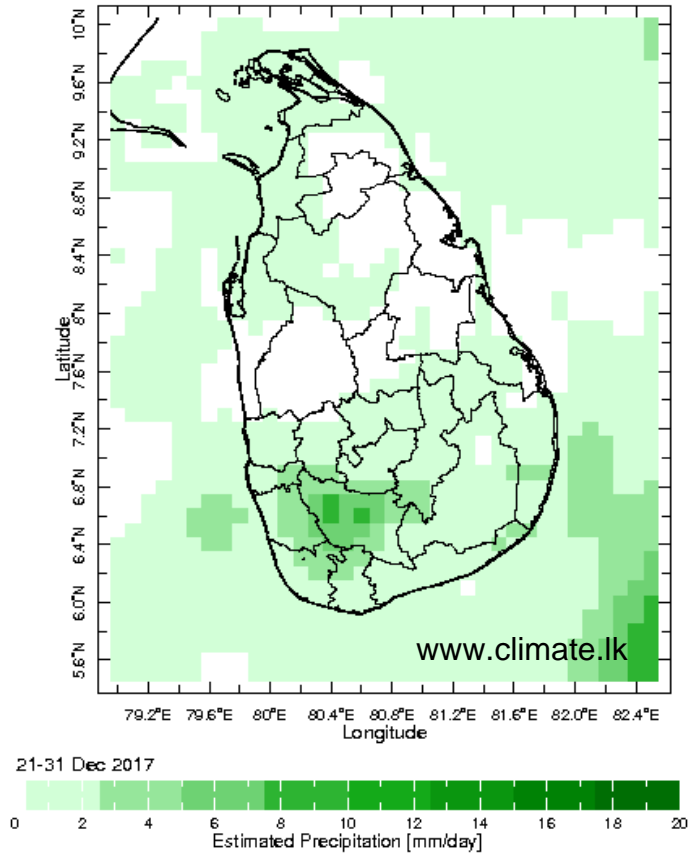


Monthly Rainfall Monitoring

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

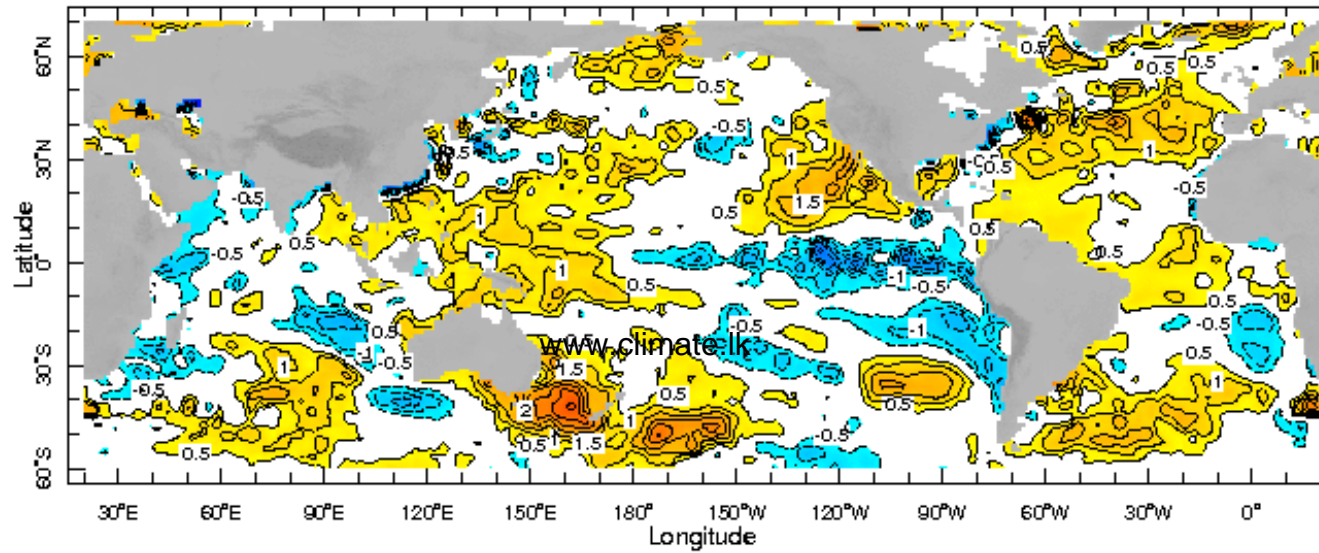


Dekadal (10 Day) Satellite Derived Rainfall Estimates

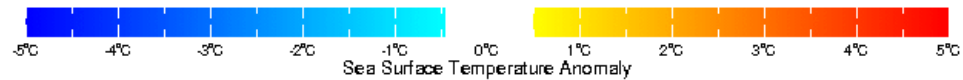


Weekly Average SST Anomalies

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



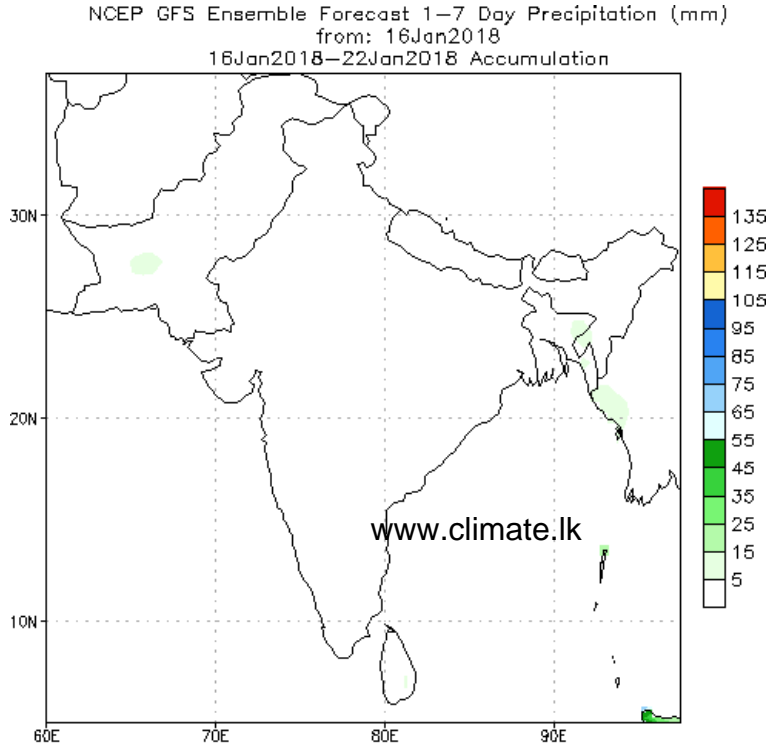
10 Jan 2018



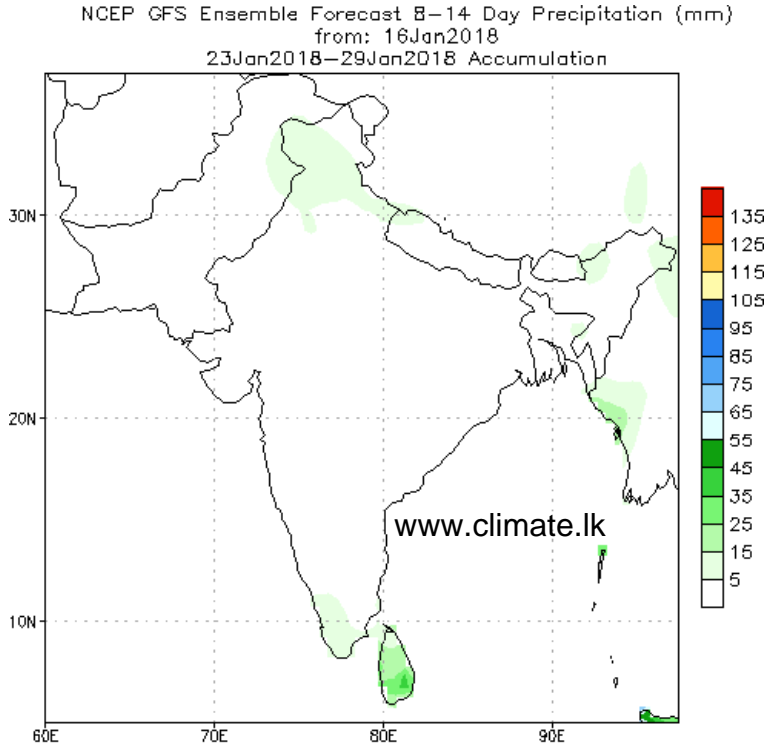
WORLDBATH topography

PREDICTIONS

NCEP GFS 1- 14 Day prediction



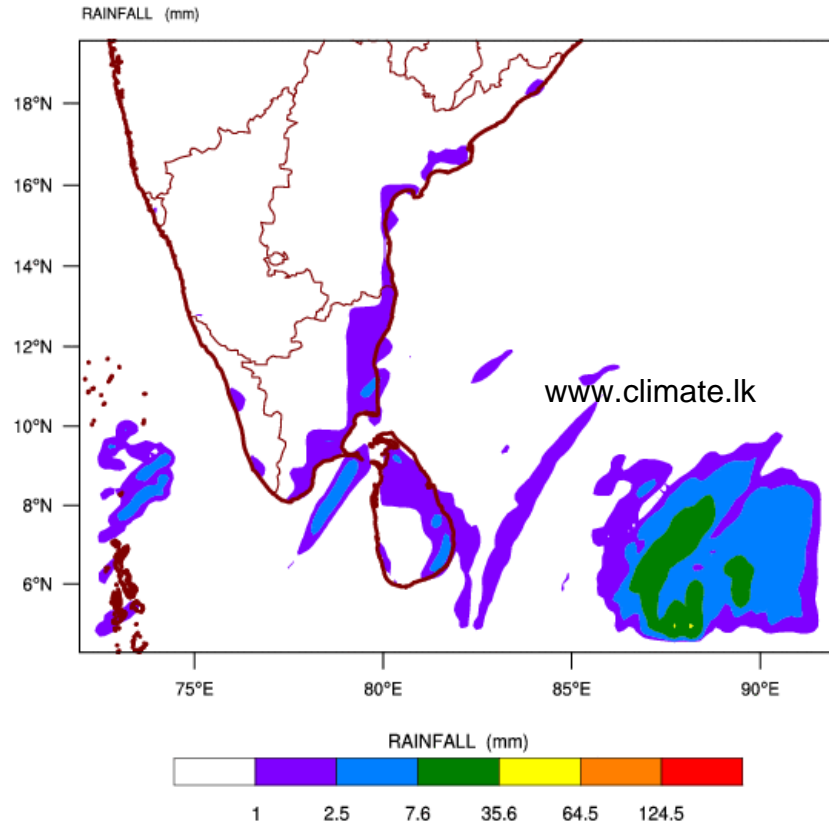
Bias correction based on last 30-day forecast error



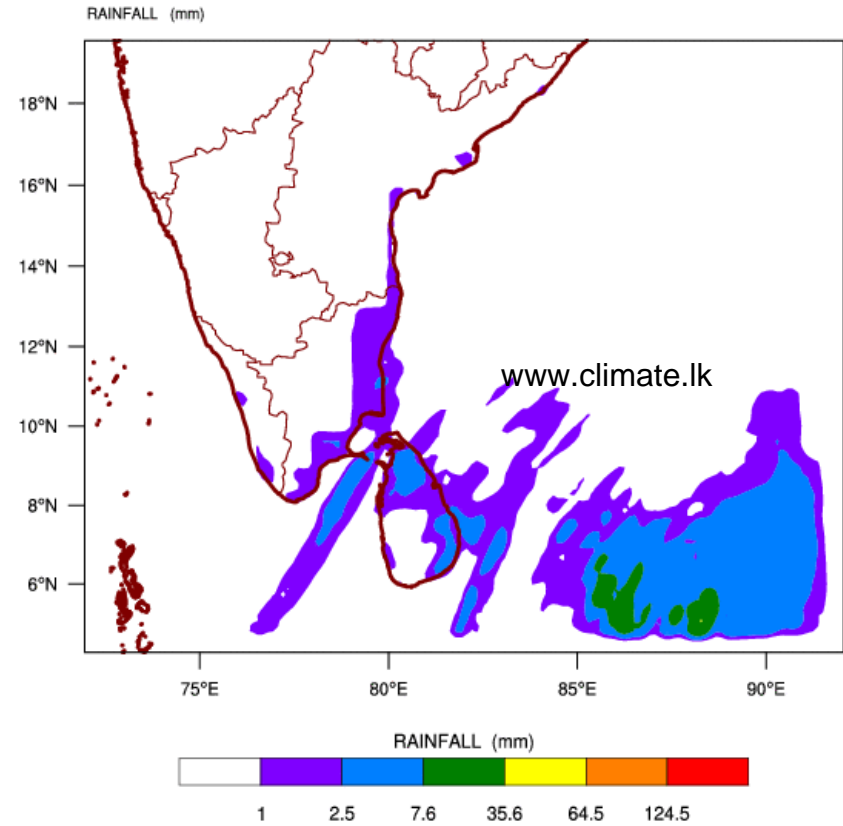
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 17-01-2018 valid for 03 UTC of 19-01-2018

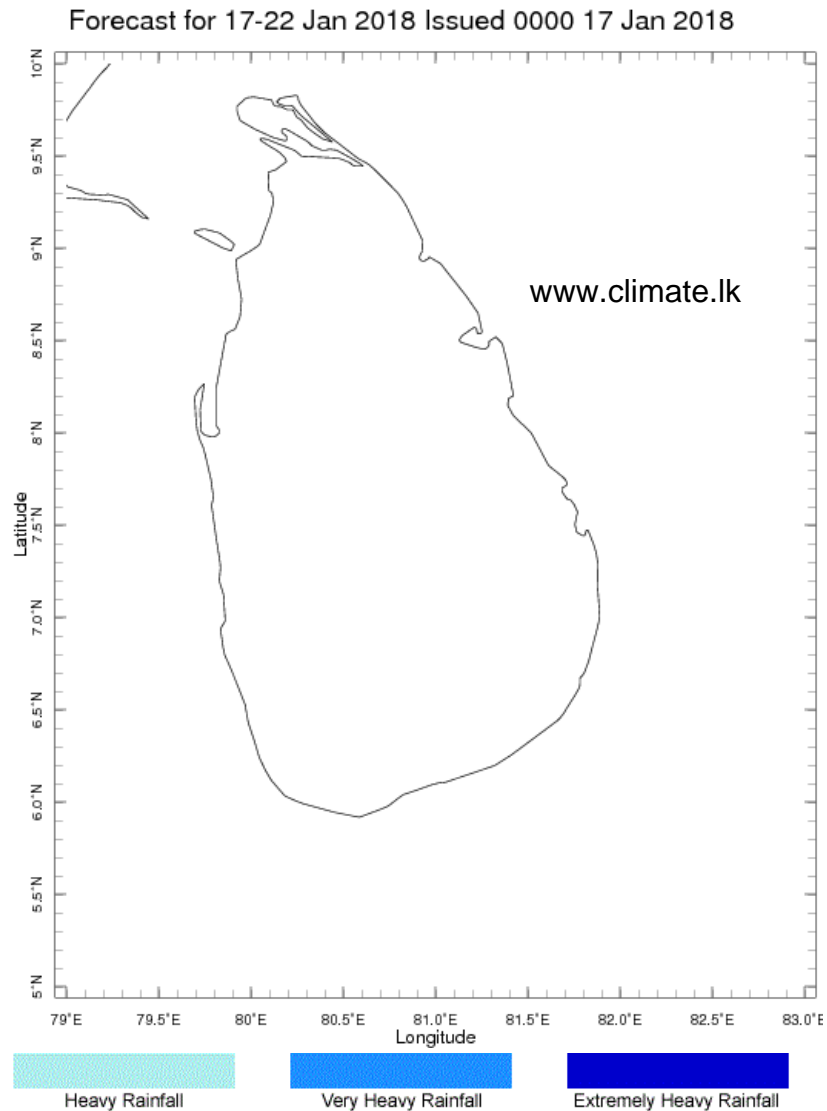


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 17-01-2018 valid for 03 UTC of 20-01-2018

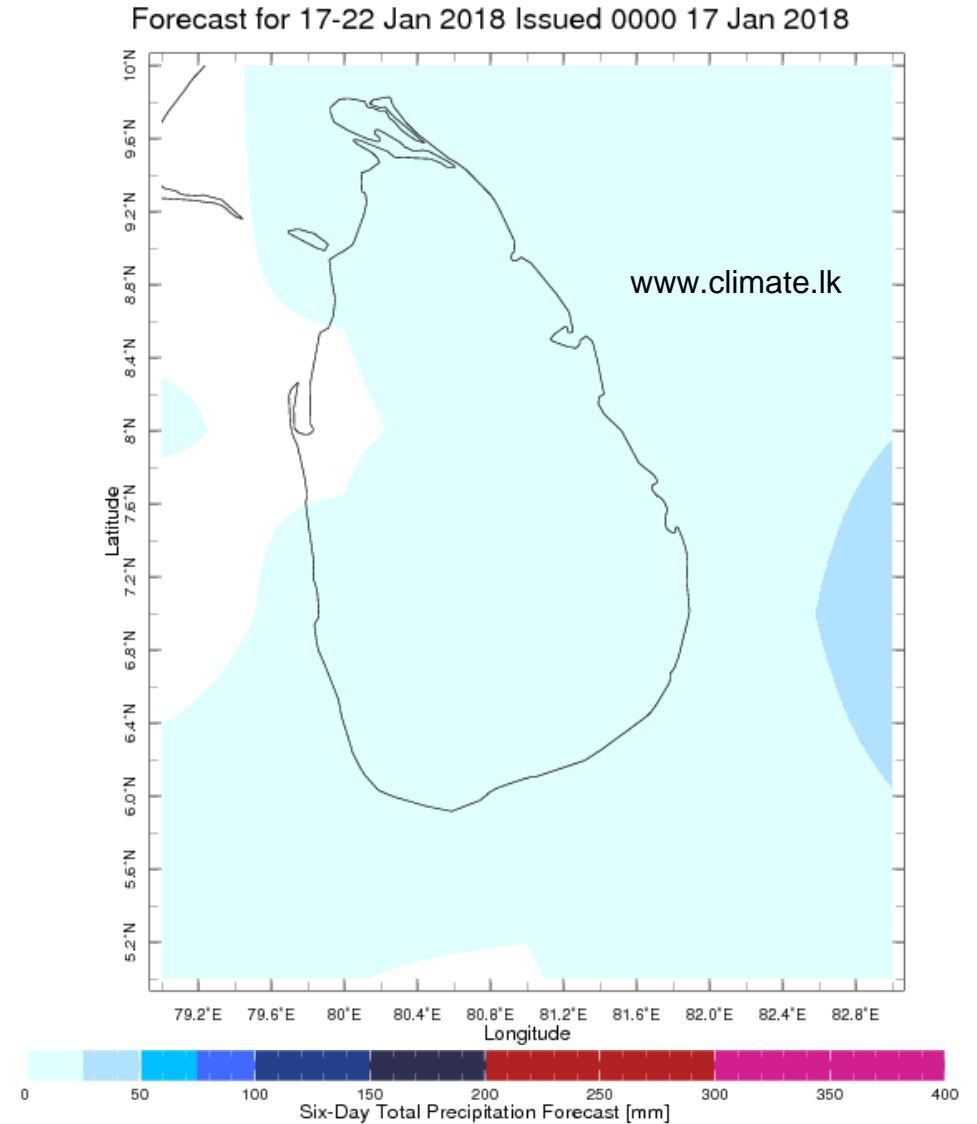


Weekly Rainfall Forecast from IRI

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