

**5 December
2019**

EXPERIMENTAL CLIMATE MONITORING AND PREDICTION

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HIGHLIGHTS

Rainfall Forecast



- The NOAA weekly rainfall forecast predicts up to 220 mm of total rainfall in Batticaloa and Ampara during 4- 9 Dec.

Monitored Rainfalls



- Between 26 Nov 2 Dec: up to 180 mm of rainfall was recorded in Batticaloa and Kurunegala districts on the 30th.

Monitored Wind



- From 26 Nov 2 Dec: up to 36 km/h, northeasterly winds were experienced by the entire island.

Monitored Sea Surface



- 1 °C above average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring

Date	Rainfall
26th November	Up to 30 mm in Colombo district; and up to 20 mm in Kilinochchi, Matale, Ampara, Badulla, Monaragala, Gampaha, Ratnapura and Kalutara districts.
27th November	Up to 50 mm in Ampara and Batticaloa districts; up to 30 mm in Kilinochchi, Anuradhapura, Trincomalee, Polonnaruwa and Monaragala districts; and up to 20 mm in Gampaha, Puttalam, Kurunegala, Matale, Badulla, Vavuniya, Mannar and Mullaitivu districts.
28th November	Up to 70 mm in Ampara and Batticaloa districts; up to 60 mm in Polonnaruwa and Monaragala districts; up to 50 mm in Mullaitivu, Trincomalee, Anuradhapura, Matale, Badulla, Galle and Colombo districts; up to 30 mm in Jaffna, Kilinochchi, Gampaha, Kalutara, Matara and Hambantota districts; and up to 20 mm in rest of the island.
29th November	Up to 100 mm in Kalutara and Galle districts; up to 70 mm in Kegalle, Gampaha and Colombo districts; up to 60 mm in Polonnaruwa, Batticaloa and Matara districts; up to 50 mm in Jaffna, Kilinochchi, Mannar, Mullaitivu, Anuradhapura, Trincomalee,



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Date	Rainfall
	Puttalam, Kurunegala, Matale, Kandy, Badulla, Ampara and Ratnapura districts; and up to 30 mm in rest of the island.
30th November	Up to 180 mm in Kurunegala district; up to 160 mm in Anuradhapura and Matale districts; up to 100 mm in Polonnaruwa, Kandy, Nuwara Eliya, Badulla and Monaragala districts; up to 70 mm in Mannar, Puttalam, Gampaha, Kegalle, Ratnapura, Galle and Batticaloa districts; and up to 50 mm in rest of the island.
1st December	Up to 70 mm in Mannar and Puttalam districts; up to 60 mm in Anuradhapura district; up to 50 mm in Vavuniya, Polonnaruwa, Matale and Ampara districts; up to 30 mm in Jaffna, Kilinochchi, Trincomalee, Kurunegala, Kandy, Nuwara Eliya, Badulla, Monaragala and Batticaloa districts; and up to 20 mm in most parts of the island.
2nd December	Up to 70 mm in Trincomalee and Batticaloa districts; up to 60 mm in Anuradhapura district; up to 50 mm in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Polonnaruwa, Ampara and Monaragala districts; up to 30 mm in Mannar, Badulla, Hambantota, Matara and Galle districts; and up to 20 mm in most parts of the island.

Total Rainfall for the Past Week

The RFE 2.0 tool shows total up to 300-500 mm in Batticaloa and Ampara districts; up to 200-300 mm in Mullaitivu, Trincomalee, Mannar, Anuradhapura, Matale, Kandy, Badulla and Monaragala districts; and up to 150-200 mm in Jaffna, Kilinochchi, Vavuniya, Puttalam, Kurunegala, Gampaha, Kalutara, Galle and Hambantota districts. Above average rainfall up to 200-300 mm is shown for Anuradhapura, Matale, Trincomalee, Badulla, Monaragala, Batticaloa and Ampara districts; and up to 100-200 mm in most parts of the island.

Monthly Monitoring

During November – Above average rainfall conditions up to 300 mm were experienced by Batticaloa and Ampara districts; up to 240 mm in Gampaha, Colombo, Kalutara, Galle, Kegalle districts and southern regions of Polonnaruwa district; and up to 150 mm in Matale, Badulla, Monaragala, Nuwara Eliya, Ratnapura and Matara districts. Below average rainfall conditions up to 300 mm were experienced by Vavuniya district; up to 150 mm in Jaffna, Kilinochchi, Mullaitivu and several regions of Mannar, Trincomalee, Anuradhapura, Kandy, Puttalam, Kurunegala and Polonnaruwa districts. The CPC Unified Precipitation Analysis tool shows up to 750 mm were experienced by Batticaloa and Ampara districts; and up to 500 mm in most parts of the island.

Ocean State (Text Courtesy IRI)

Pacific sea state: November 19, 2019

SSTs in the east-central Pacific were near thresholds of weak El Niño levels during October and early November. However, patterns in most atmospheric variables generally maintained neutral conditions. The oceanic warming is attributed to intraseasonal variability, and the overall diagnosis indicates ENSO-neutral conditions. Most model forecasts favor ENSO-neutral through winter and spring, with slightly higher chances for El Niño than La Niña. The official CPC/IRI outlook is consistent with these model forecasts.



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Indian Ocean State

1 °C above average sea surface temperature was observed in the seas around Sri Lanka.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 4th – 10th Dec: Total rainfall more than 135 mm in Trincomalee, Anuradhapura, Polonnaruwa, Batticaloa, Ampara, Monaragala, Badulla, Matale, Kandy, Nuwara Eliya, Kegalle, Ratnapura, Galle and Matara districts; up to 115-125 mm in Kurunegala and Gampaha districts; and up to 105-115 mm in Puttalam district.

From 11th – 17th Dec: Total rainfall more than 135 mm in Batticaloa and Ampara districts; up to 125-135 mm in Trincomalee and Polonnaruwa districts; and up to 115-125 mm in Anuradhapura, Badulla and Monaragala districts.

NOAA Model Forecast:

From 4th – 9th Dec: Total rainfall up to 220 mm is expected in Batticaloa and Ampara districts; up to 150 mm is expected in Mullaitivu, Trincomalee, Polonnaruwa, Hambantota and Monaragala districts; and up to 100 mm in Vavuniya, Anuradhapura and Badulla districts.

MJO based OLR predictions

For the next 15 days:

MJO shall enhance the rainfall in Sri Lanka.

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 Web

<http://www.climate.lk>
<http://www.tropicalclimate.org/>



FECT Blog

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Weekly Hydro- Meteorological Report for Sri Lanka

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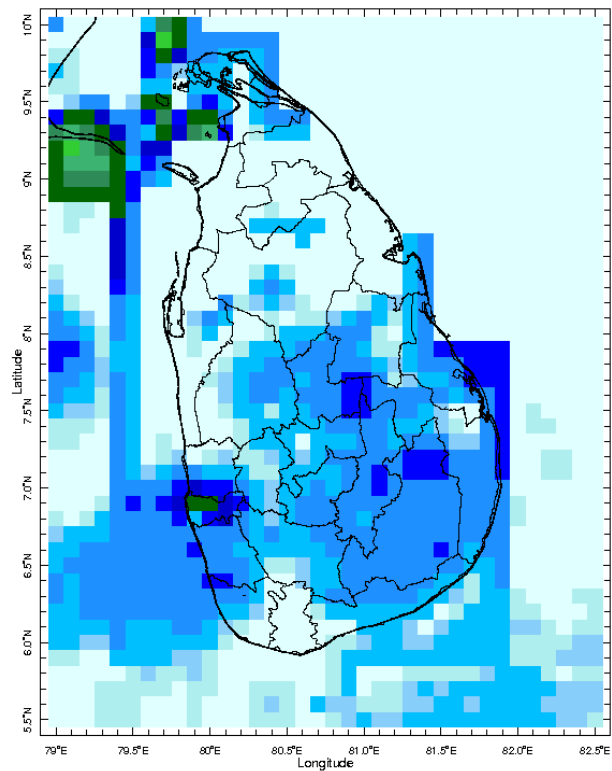
2. Predictions

- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
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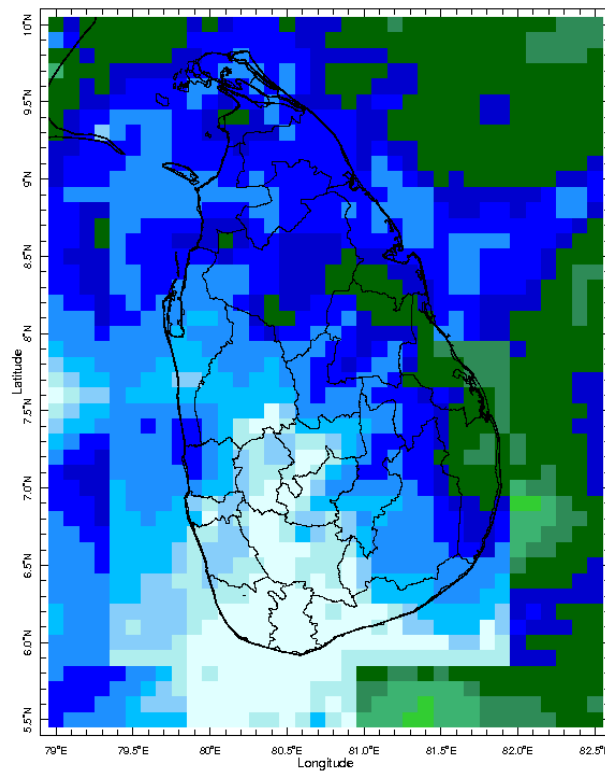
MONITORING

Daily Rainfall Monitoring

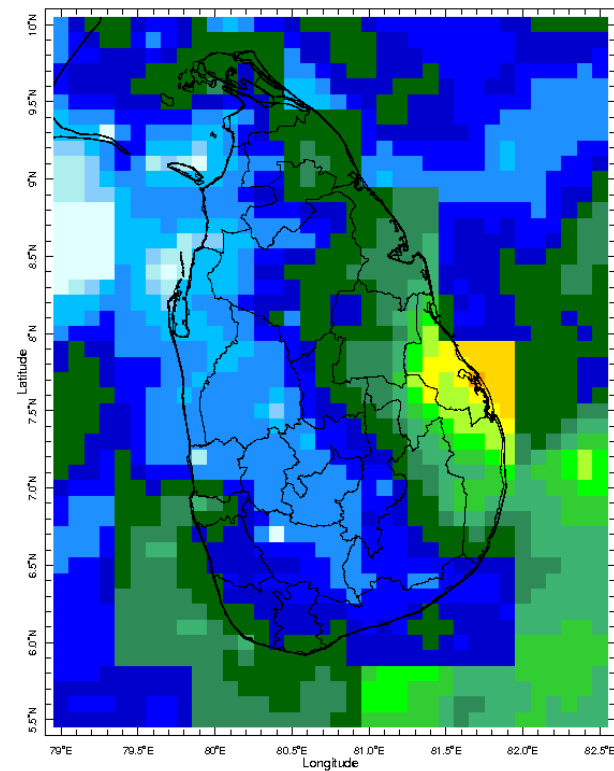
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



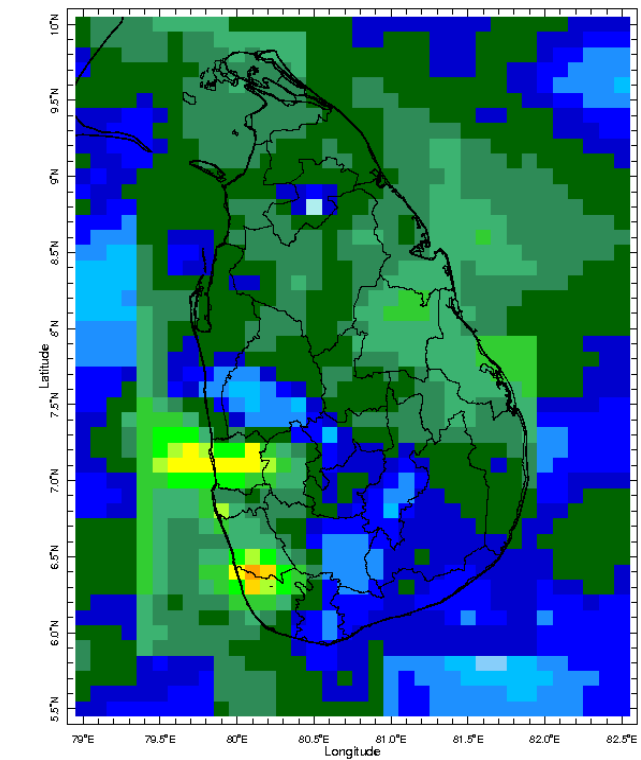
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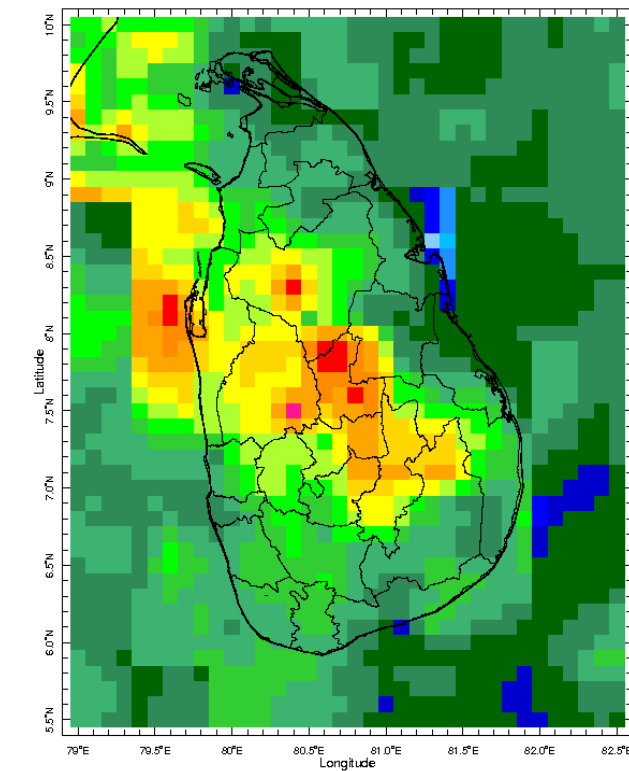
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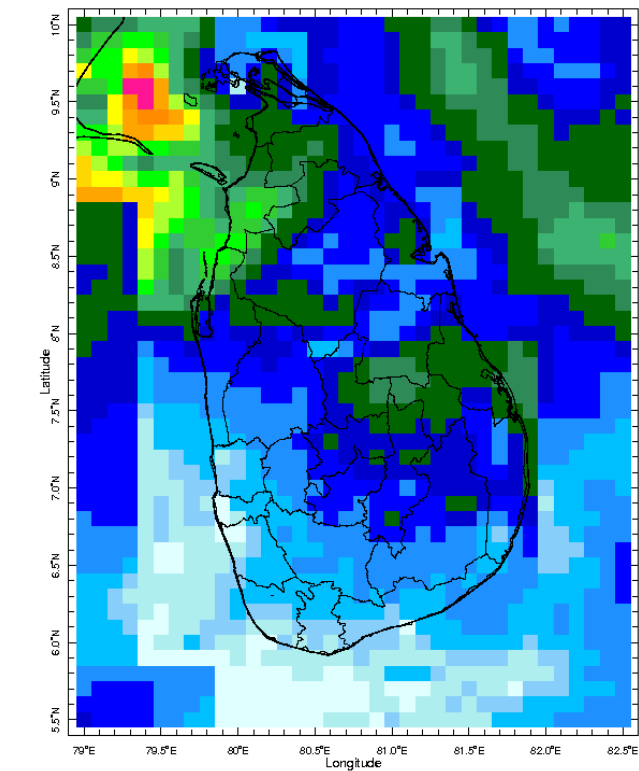
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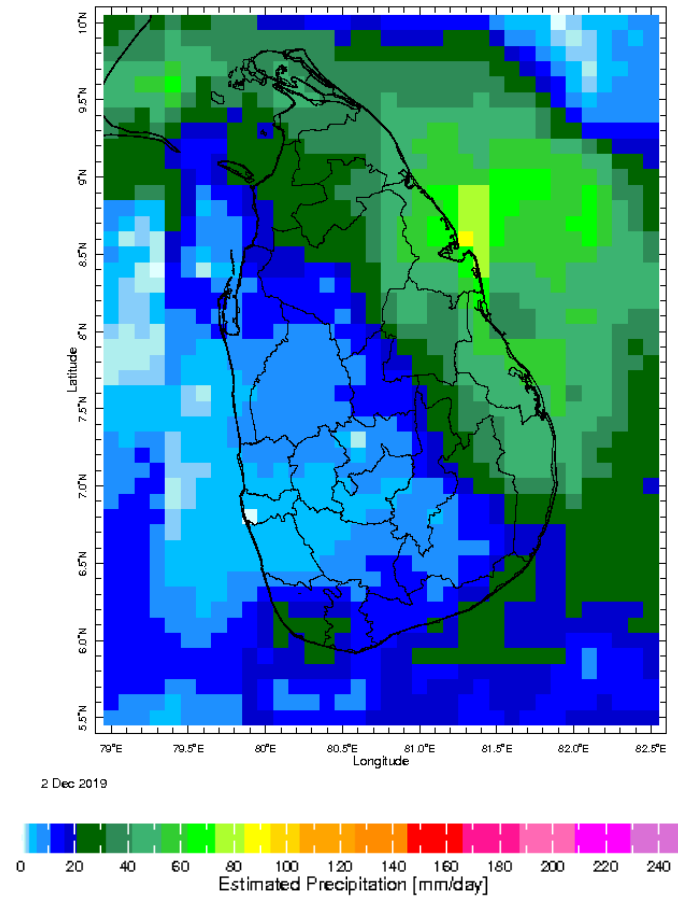
29 Nov 2019



30 Nov 2019

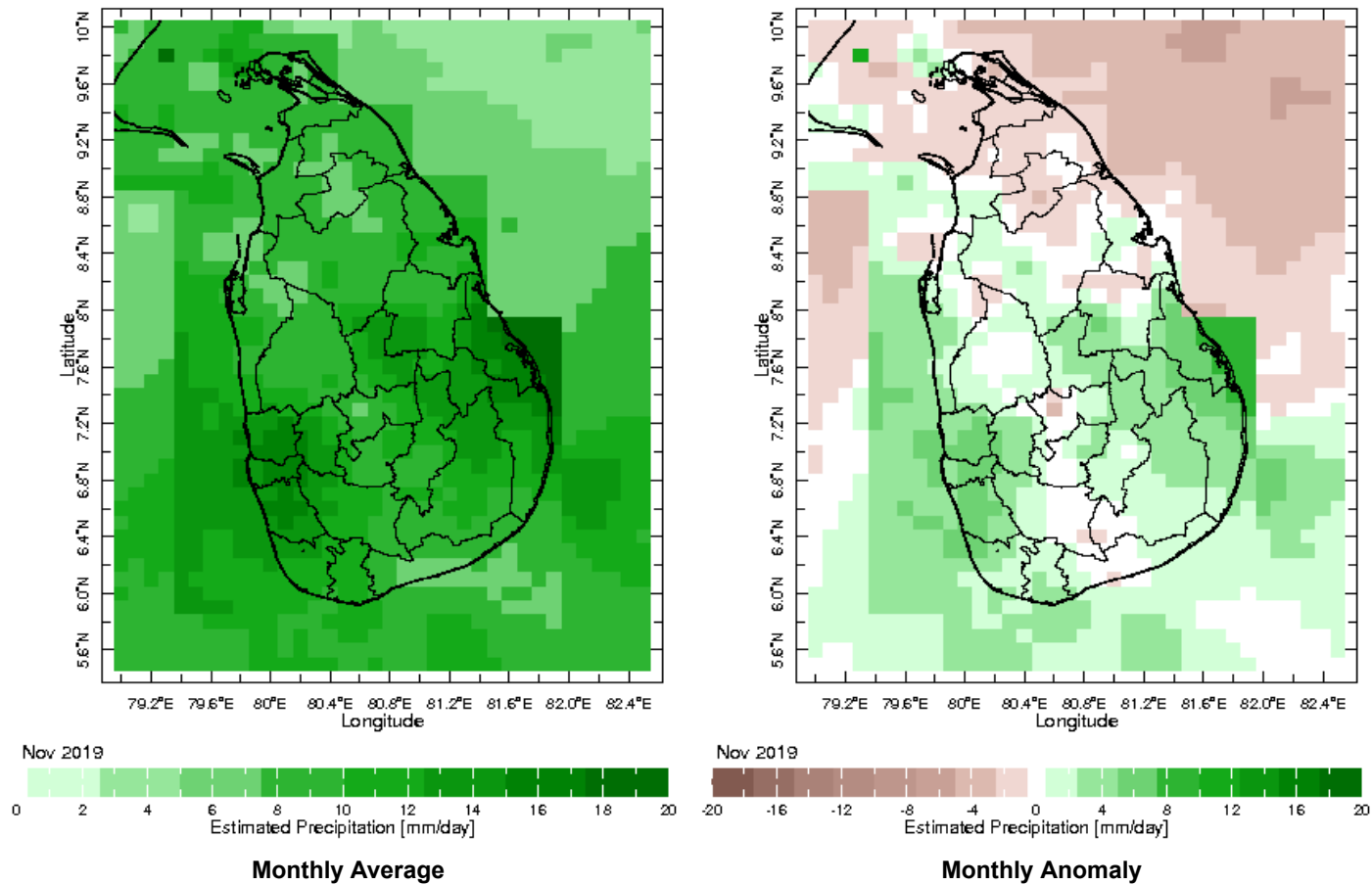


1 Dec 2019

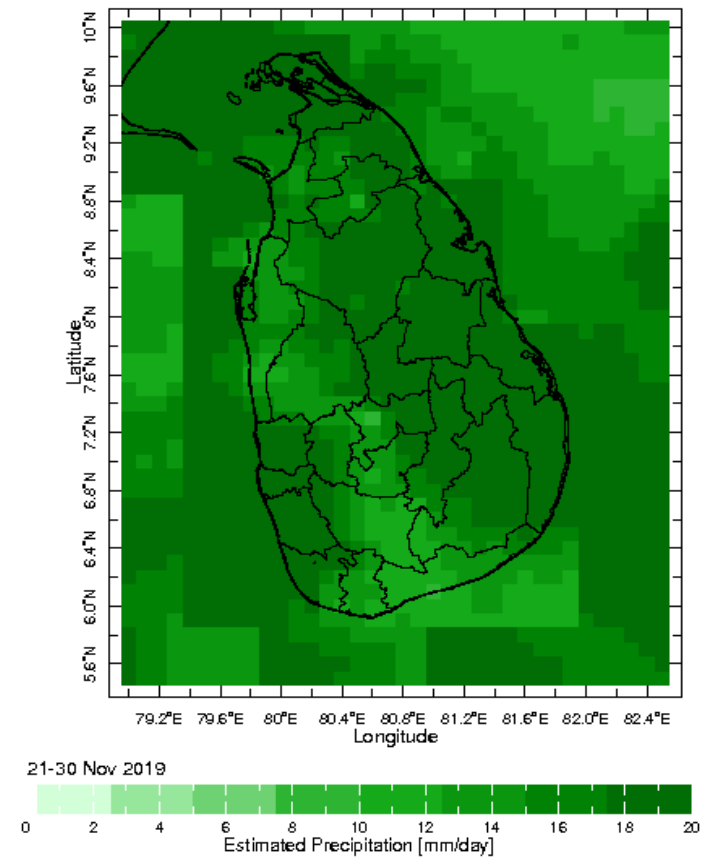
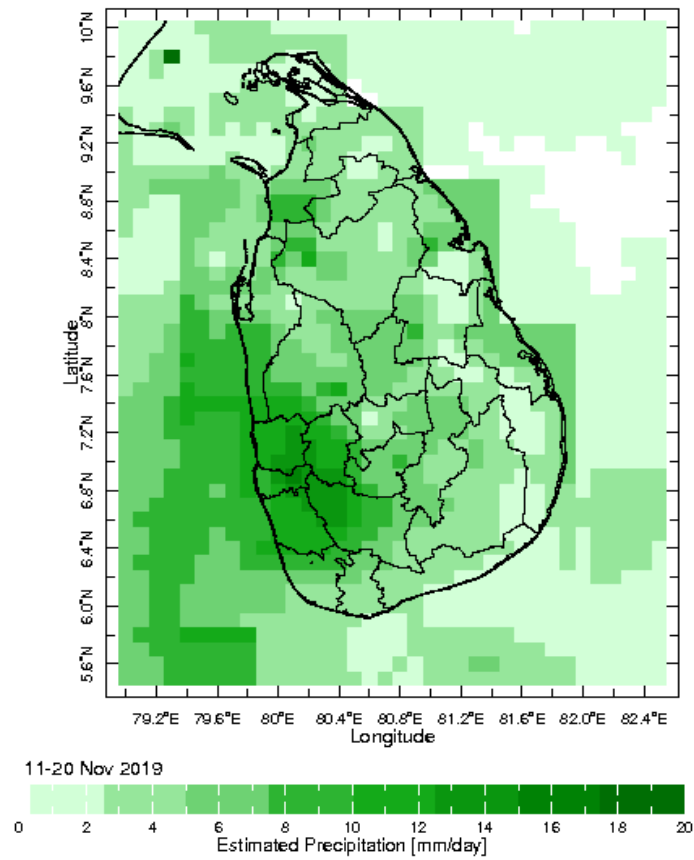


Monthly Rainfall Monitoring

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

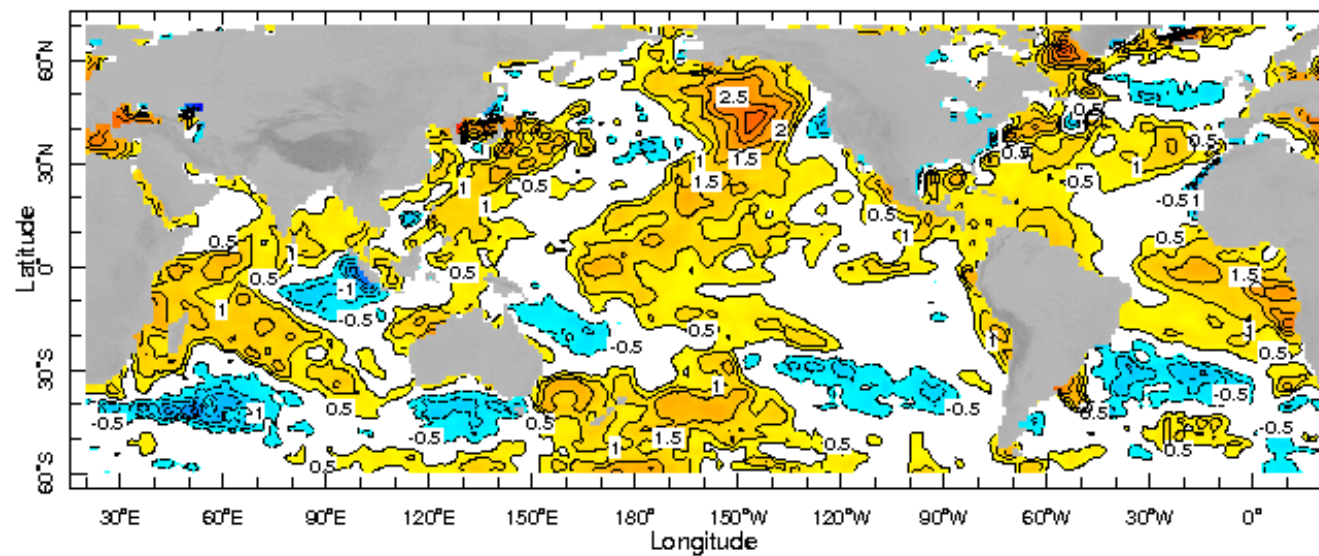


Dekadal (10 Day) Satellite Derived Rainfall Estimates

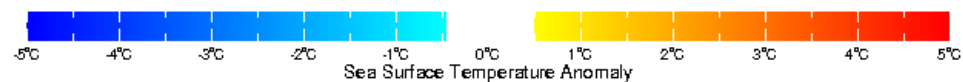


Weekly Average SST Anomalies

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



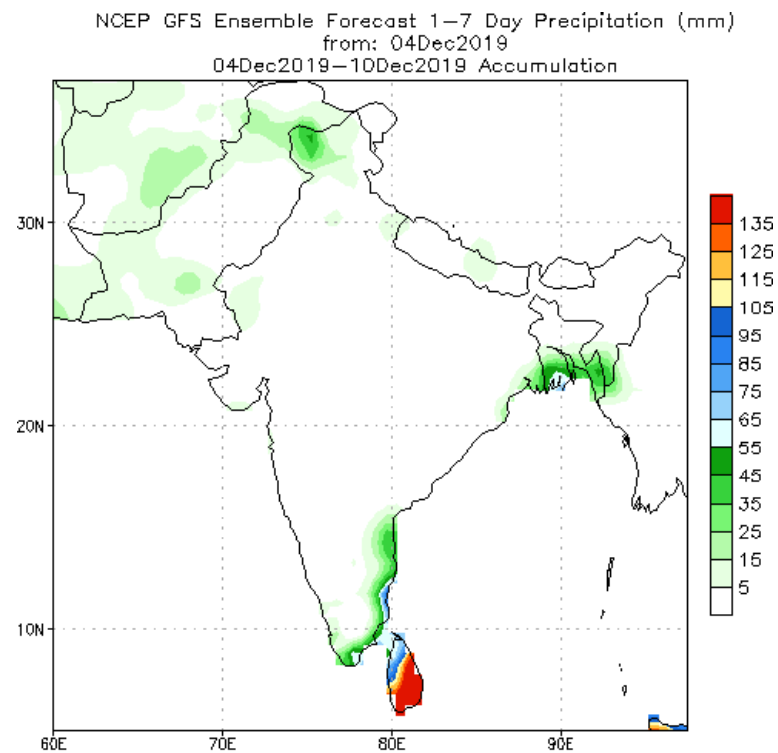
27 Nov 2019



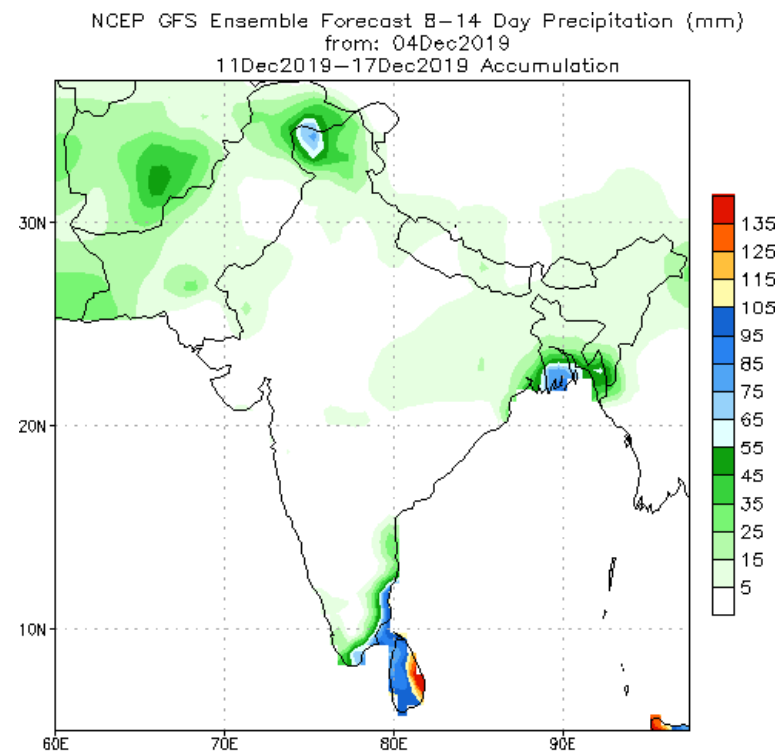
WORLDBATH topography

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)

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.

