

**28 November
2019**

EXPERIMENTAL CLIMATE MONITORING AND PREDICTION

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HIGHLIGHTS

Rainfall Forecast



- The NOAA weekly rainfall forecast predicts up to 200 mm of total rainfall in northern and eastern regions of the island during 25 Nov - 2 Dec.

Monitored Rainfalls



- Between 20 - 25 Nov: up to 120 mm of rainfall was recorded in Batticaloa and Ampara districts on the 25th.

Monitored Wind



- From 19 - 25 Nov: 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
20th November	Up to 50 mm in Trincomalee district; up to 30 mm in Kalutara, Galle and Ratnapura districts; and up to 20 mm in Gampaha, Colombo, Matara, Hambantota, Monaragala and Ampara districts.
21st November	Up to 50 mm in Mullaitivu, Vavuniya and Trincomalee districts; up to 30 mm in Anuradhapura and Batticaloa districts; and up to 20 mm in Jaffna, Kilinochchi, Mannar, Polonnaruwa, Matale, Colombo, Kalutara and Ampara districts.
22nd November	Up to 70 mm in Kalutara district; up to 60 mm in Colombo and Ratnapura districts; up to 50 mm in Galle district; up to 30 mm in Kegalle, Badulla, Ampara, Monaragala, Batticaloa and Matara districts; up to 20 mm in Mannar, Gampaha, Kandy, Nuwara Eliya and Hambantota districts; and up to 10 mm most parts of the island.
23rd November	Up to 70 mm in Batticaloa and Ampara districts; up to 50 mm in Gampaha, Polonnaruwa, Badulla and Monaragala districts; up to 30 mm in Trincomalee, Matale, Kandy, Puttalam and Colombo districts; and up to 20 mm in Vavuniya, Anuradhapura,



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Date	Rainfall
	Kurunegala, Kegalle, Ratnapura, Nuwara Eliya, Kalutara, Galle, Matara and Hambantota districts.
24th November	Up to 70 mm in Jaffna and Kilinochchi districts; up to 60 mm in Mullaitivu, Polonnaruwa, Batticaloa and Ampara districts; up to 50 mm in Mannar, Badulla, Monaragala and Hambantota districts; up to 30 mm in Vavuniya, Anuradhapura and Matale districts; and up to 20 mm in Puttalam, Kurunegala, Kandy, Ratnapura, Matara and Trincomalee districts.
25th November	Up to 120 mm in Batticaloa and Ampara districts; up to 70 mm in Polonnaruwa, Badulla and Monaragala districts; up to 60 mm in Trincomalee district; up to 50 mm in Anuradhapura, Matale and Ratnapura districts; up to 30 mm in Kilinochchi, Mannar, Vavuniya, Mullaitivu, Puttalam, Gampaha, Colombo, Kalutara, Galle, Kandy and Hambantota districts; and up to 20 mm in rest of the island.

Total Rainfall for the Past Week

The RFE 2.0 tool shows total up to 100-150 mm in Trincomalee, Batticaloa, Polonnaruwa, Badulla, Monaragala and Ampara districts; up to 75-100 mm in Jaffna, Kilinochchi, Mullaitivu, Anuradhapura, Matale, Kandy, Gampaha, Colombo, Kalutara and Galle districts; and up to 50-75 mm in Mannar, Kegalle, Ratnapura, Matara and Hambantota districts. Above average rainfall up to 100-200 mm is shown for Batticaloa and Ampara districts; up to 50-100 mm in Polonnaruwa district; and up to 25-50 mm in Monaragala district. Below average rainfall up to 50-100 mm is shown for Anuradhapura, Kurunegala and Kandy districts; up to 25-50 mm in Mannar, Vavuniya, Puttalam, Kegalle, Gampaha, Kegalle, Ratnapura, Nuwara Eliya and Matara districts.

Monthly Monitoring

During October – Above average rainfall conditions up to 360 mm were experienced by Kilinochchi, Ratnapura, Vavuniya, Anuradhapura, Kurunegala, Matara and Hambantota districts; up to 300 mm in Jaffna district; and up to 240 mm in rest of the island. The CPC Unified Precipitation Analysis tool shows up to 750 mm were experienced by Colombo and Ratnapura 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 27th Nov – 3rd Dec: Total rainfall more than 135 mm in Jaffna, Kilinochchi, Mannar, Vavuniya, Mullaitivu, Anuradhapura, Polonnaruwa, Trincomalee, Matale, Badulla, Monaragala, Hambantota, Batticaloa and Ampara districts; up to 115-125 mm in Kandy, Kegalle, Kurunegala, Nuwara Eliya and Ratnapura districts; and up to 105-115 mm in Gampaha, Kalutara, Galle and Matara districts.

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

NOAA Model Forecast:

From 27th Nov 2nd Dec: Total rainfall up to 200 mm is expected in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura and Trincomalee districts; up to 150 mm is expected in Mannar, Polonnaruwa, Batticaloa, Ampara and Monaragala districts; and up to 100 mm in Puttalam, Gampaha, Colombo, Kegalle, Ratnapura, Kandy, Nuwara Eliya, Badulla and Hambantota districts.

MJO based OLR predictions

For the next 15 days:

MJO shall not have an impact on the rainfall in Sri Lanka in next 5 days and shall enhance in the following 10 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 Web

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



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Weekly Hydro- Meteorological Report for Sri Lanka

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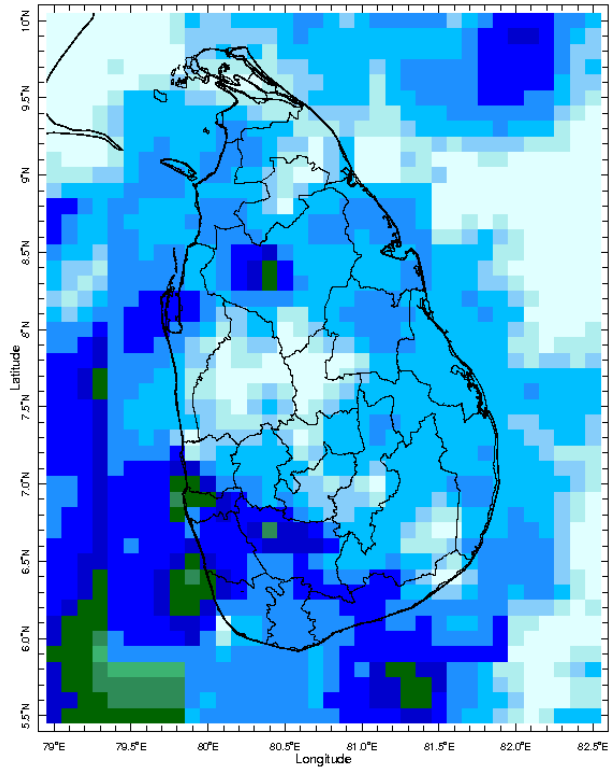
2. Predictions

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- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

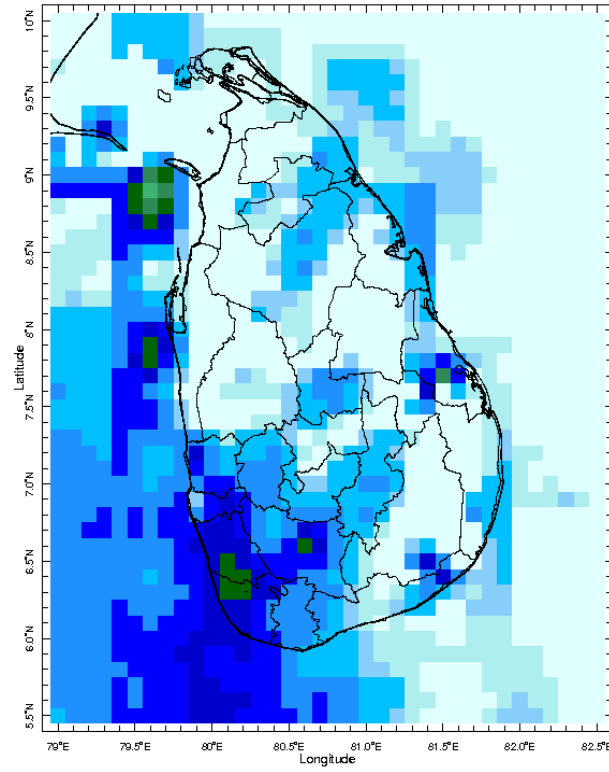
MONITORING

Daily Rainfall Monitoring

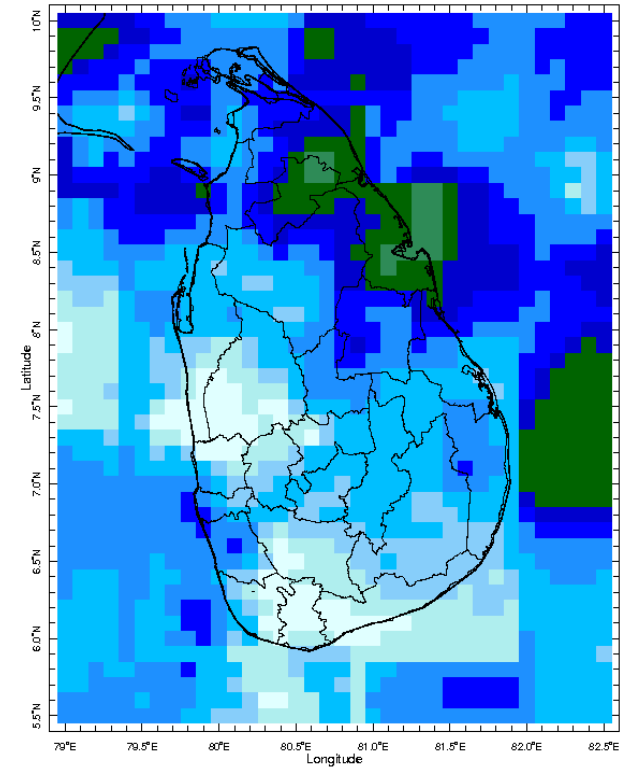
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



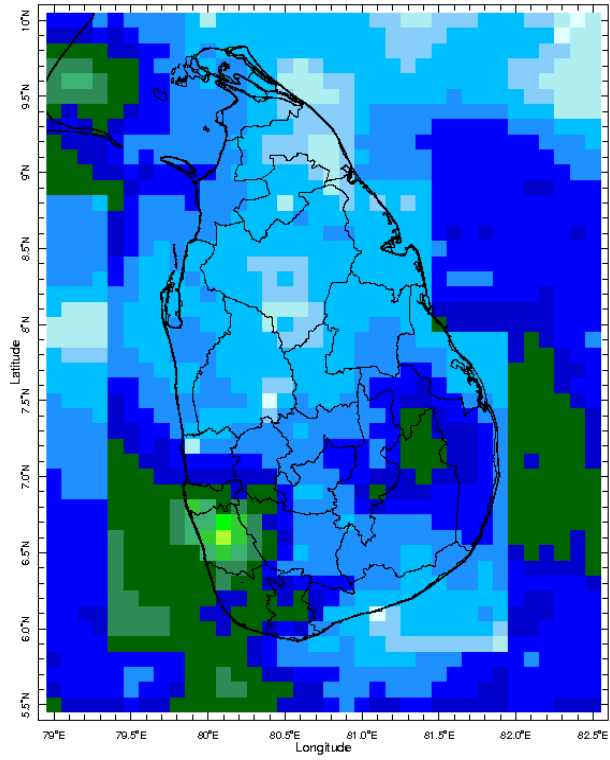
19 Nov 2019



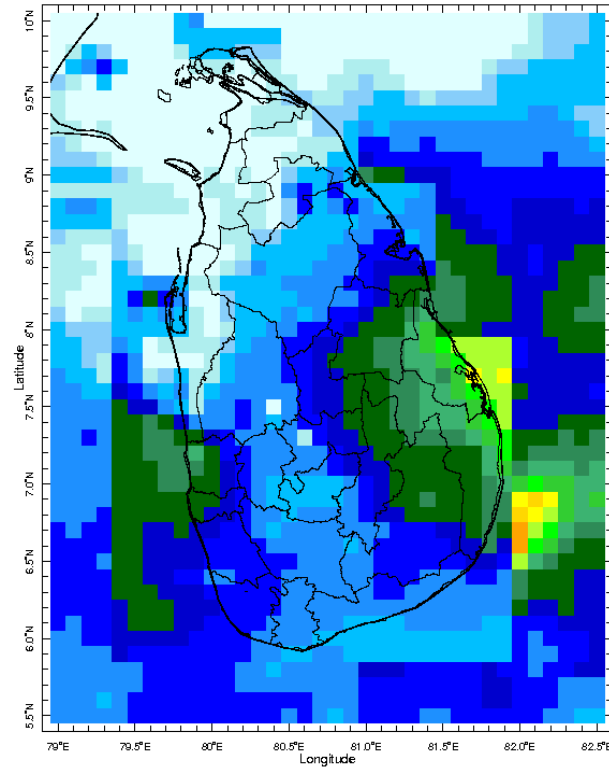
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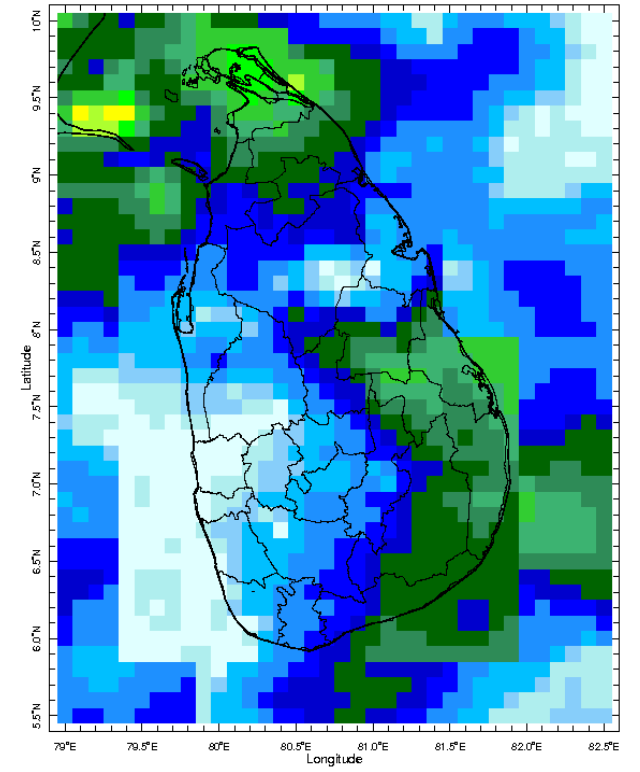
21 Nov 2019



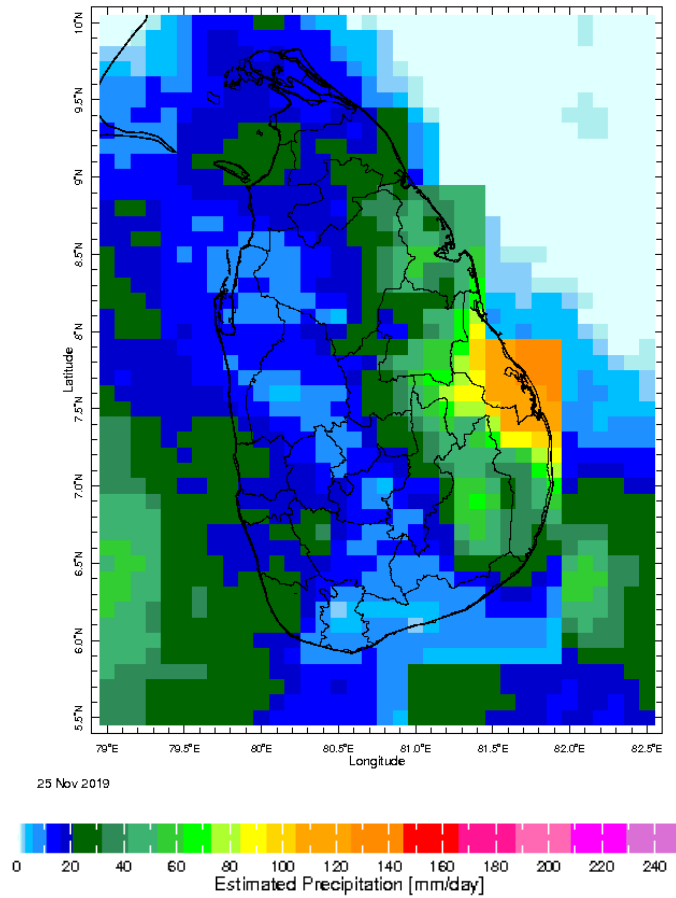
22 Nov 2019



23 Nov 2019

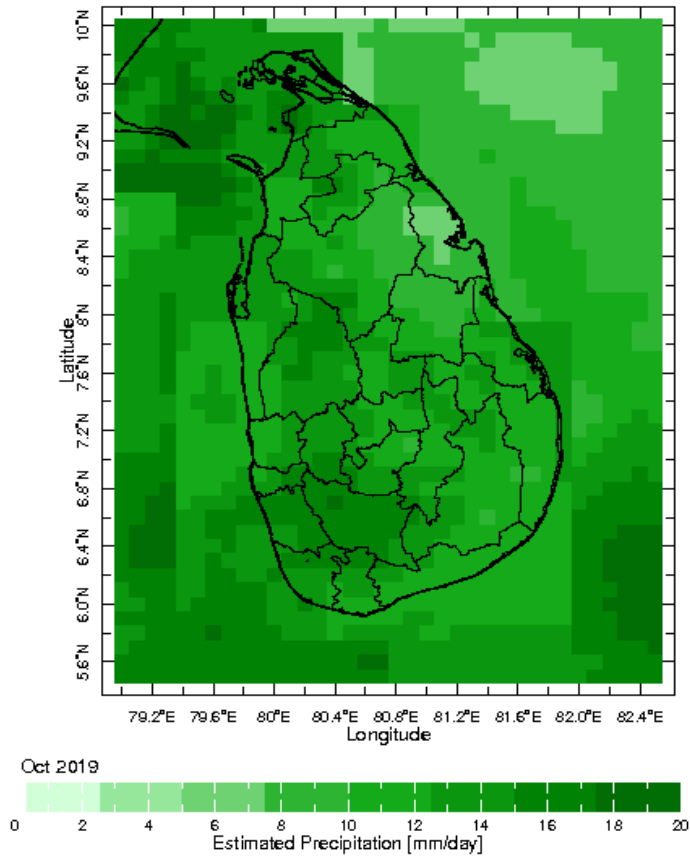


24 Nov 2019

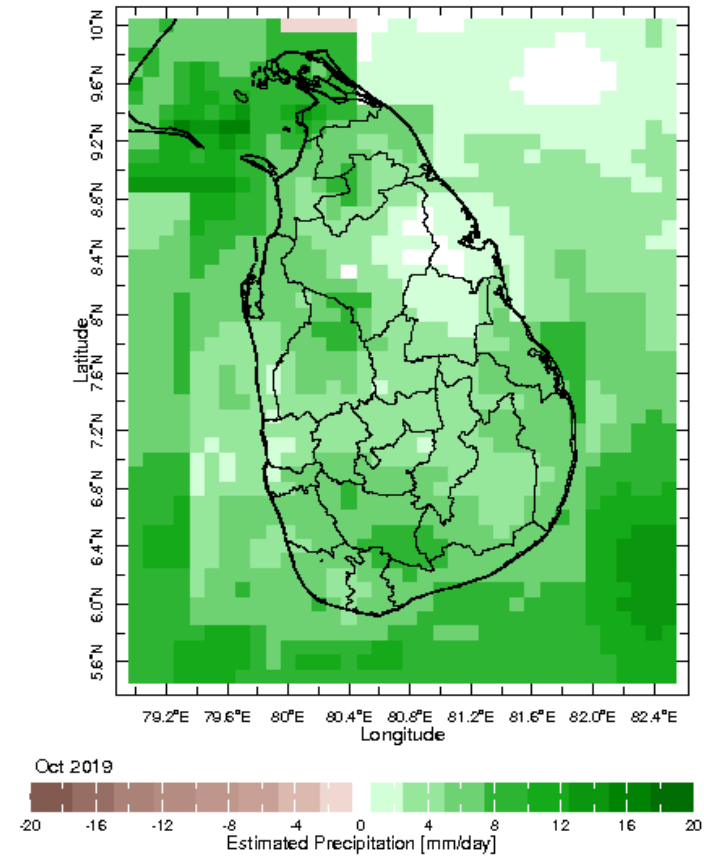


Monthly Rainfall Monitoring

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

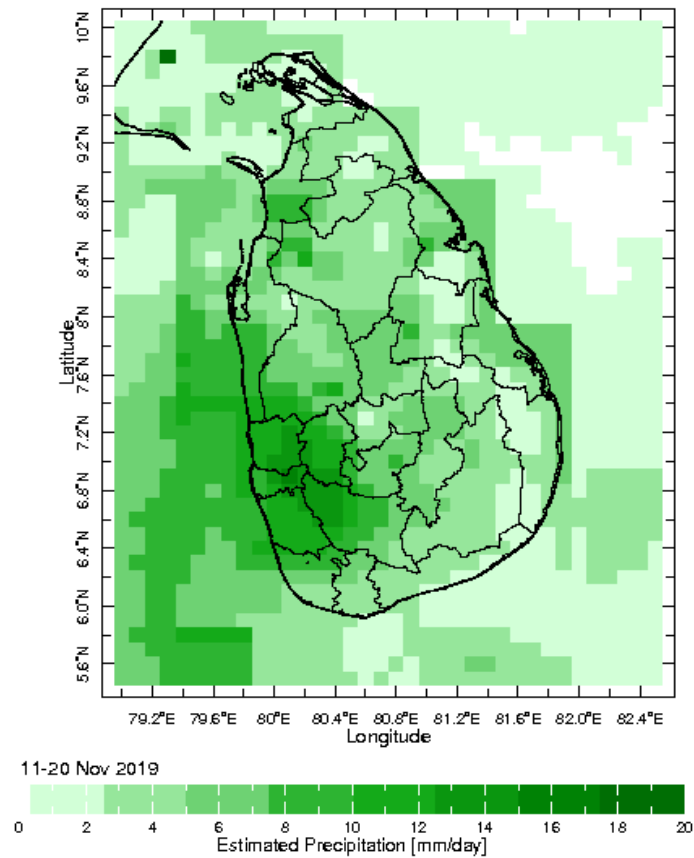
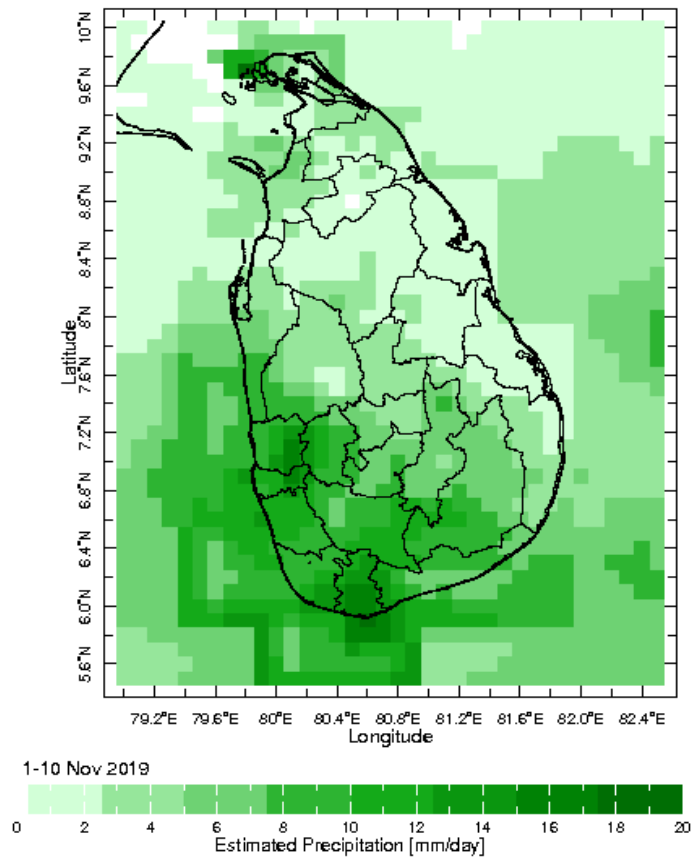


Monthly Average



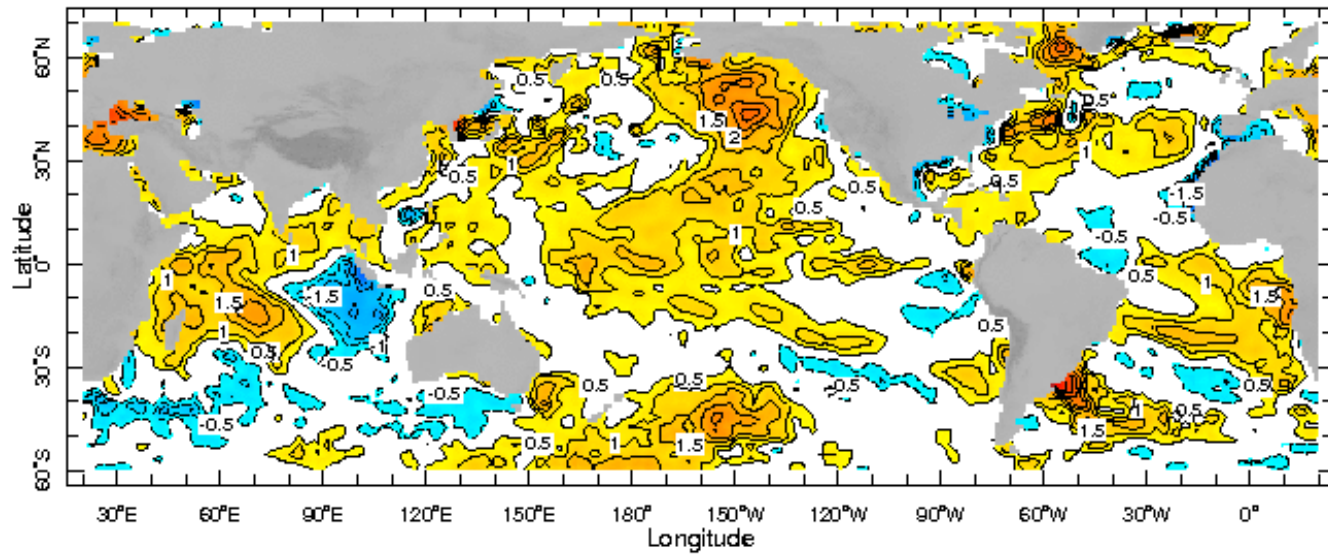
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

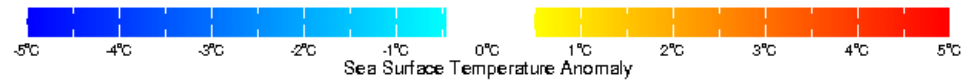


Weekly Average SST Anomalies

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



20 Nov 2019

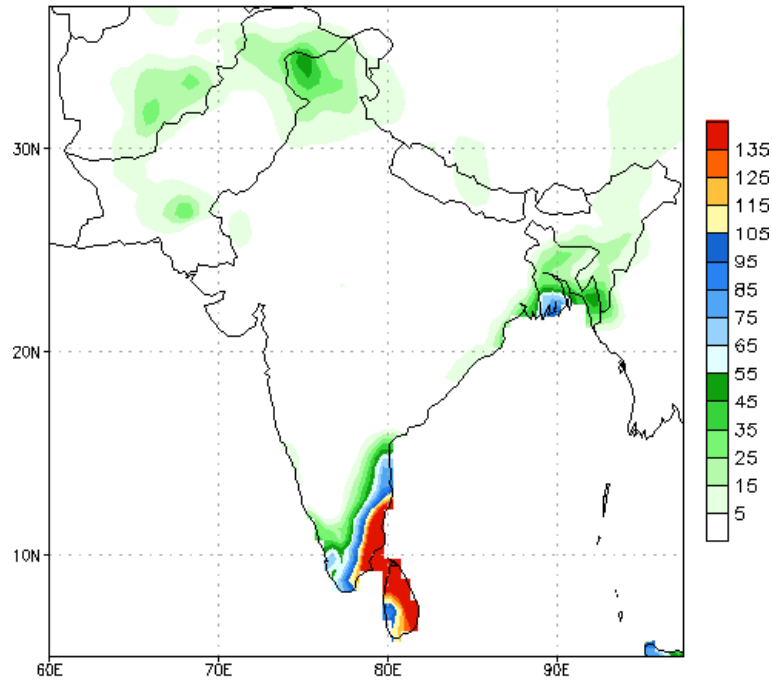


WORLDBATH topography

PREDICTIONS

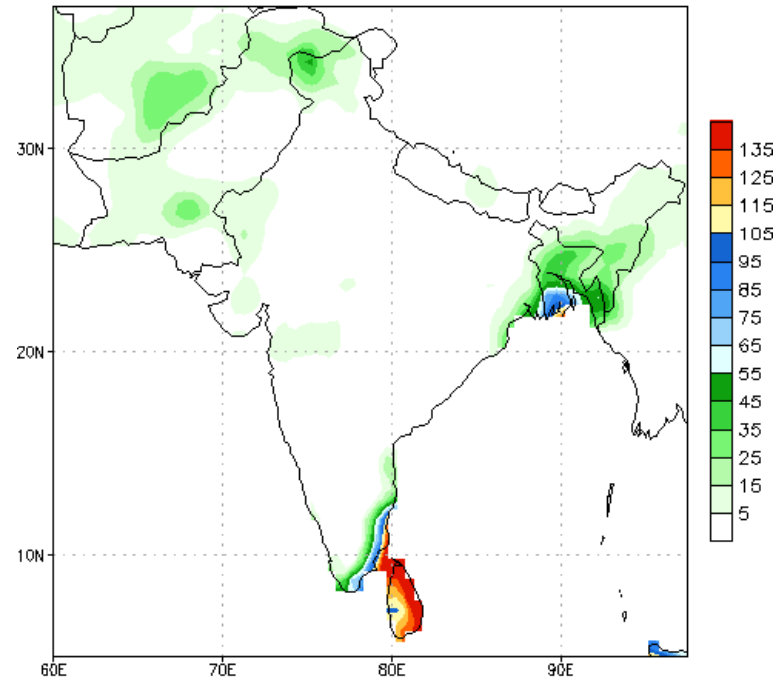
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 27Nov2019
27Nov2019-03Dec2019 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 27Nov2019
04Dec2019-10Dec2019 Accumulation

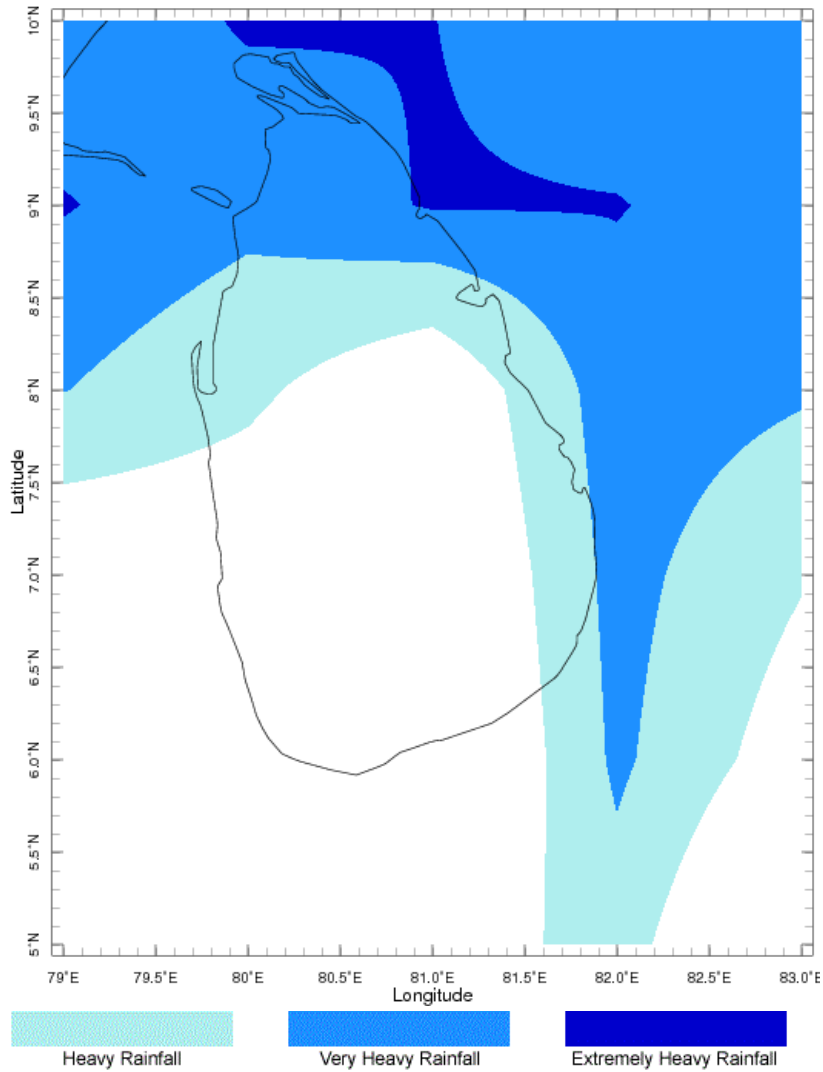


Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

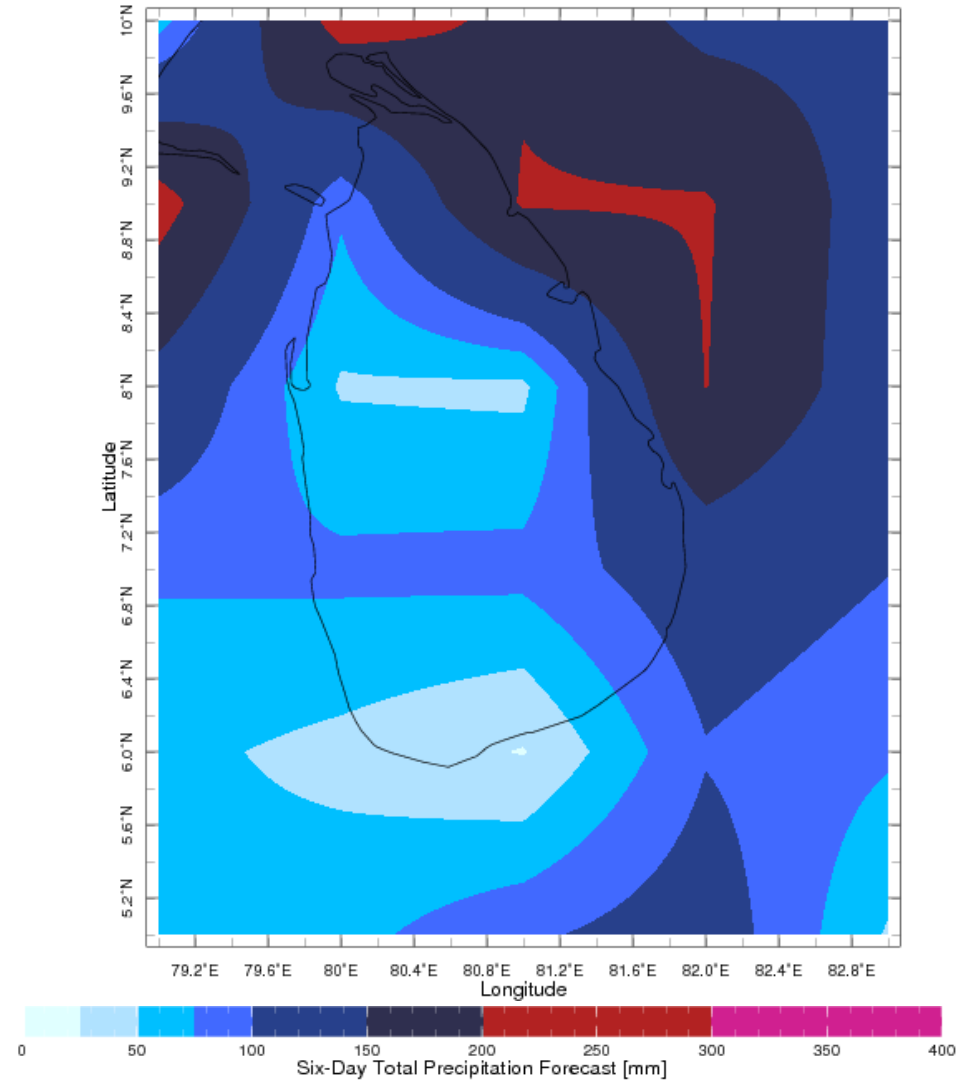
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 27 Nov 2019 - 2 Dec 2019 Issued 0000 27 Nov 2019



Extreme Rainfall Forecast

Forecast for 27 Nov 2019 - 2 Dec 2019 Issued 0000 27 Nov 2019



Total Six Day Precipitation Forecast