

**24 October
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 Jaffna district during 23 – 28 Oct.

Monitored Rainfalls



- Between 16 – 22 Oct: up to 140 mm of daily rainfall was recorded in Kilinochchi district on the 22nd.

Monitored Wind



- From 15 – 21 Oct: up to 5 km/h, southeasterly winds were experienced by the entire island.

Monitored Sea Surface



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

Monitoring

Rainfall

Weekly Monitoring

Date	Rainfall
16 th October	Up to 70 mm in Mullaitivu and Vavuniya districts; up to 60 mm in Mannar and Anuradhapura districts; up to 50 mm in Trincomalee, Puttalam, Kurunegala, Matale, Kandy and Badulla districts; up to 30 mm in Kilinochchi, Polonnaruwa, Ampara and Ratnapura districts; and up to 20 mm in Jaffna, Batticaloa, Gampaha, Colombo, Kalutara, Galle, Matara, Hambantota, Nuwara Eliya and Monaragala districts.
17 th October	Up to 50 mm in Mannar, Vavuniya, Anuradhapura, Puttalam, Kurunegala, Matale, Polonnaruwa and Badulla districts; up to 30 mm in Jaffna, Mullaitivu, Kandy, Nuwara Eliya and Ratnpura districts; and up to 20 mm in Kilinochchi, Trincomalee, Kegalle, Kalutara. Gampaha, Matara, Hambantota and Monaragala districts.
18 th October	Up to 50 mm in Gampaha and Kegalle districts; up to 30 mm in Puttalam, Kurunegala, Colombo, Kalutara and Ratnapura districts; and up to 20 mm in Matale, Kandy, Nuwara Eliya and Badulla districts.
19 th October	Up to 60 mm in Colombo and Galle districts; up to 50 mm in Puttalam, Kurunegala, Anuradhapura, Ratnapura, Kalutara and Matara districts; up to 30 mm in Matale,



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Date	Rainfall
	Kegalle, Monaragala and Hambantota districts; and up to 20 mm Vavuniya, Jaffna, Kilinochchi, Polonnaruwa, Ampara, Kandy, Nuwara Eliya, Badulla and Ampara districts.
20 th October	Up to 60 mm in Puttalam, Kurunegala and Gampaha districts; up to 50 mm in Jaffna, Anuradhapura, Matale, Kegalle, Colombo and Ratnapura districts; up to 30 mm in Kilinochchi, Mullaitivu, Vavuniya, Mannar, Batticaloa, Kandy, Nuwara Eliya, Galle and Matara districts; and up to 20 mm Trincomalee, Polonnaruwa, Ampara, Badulla, Monaragala and Hambantota districts.
21 st October	Up to 120 mm in Batticaloa and Ampara districts; up to 70 mm in Monaragala, Galle and Ratnapura districts; up to 60 mm in Mannar, Kalutara and Polonnaruwa districts; up to 50 mm in Puttalam, Kurunegala, Gampaha, Kegalle, Kandy, Nuwara Eliya, Badulla and Matara districts; up to 30 mm in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura, Trincomalee, Matale and Hambantota districts; and up to 20 mm in rest of the island.
22 nd October	Up to 140 mm in Kilinochchi district; up to 120 mm in Mannar district; up to 60 mm in Mullaitivu district; up to 50 mm in Jaffna, Vavuniya and Ratnapura districts; up to 30 mm in Puttalam and Anuradhapura districts; and up to 20 mm in Trincomalee, Kurunegala, Nuwara Eliya, Galle and Matara districts.

Total Rainfall for the Past Week

The RFE 2.0 tool shows total up to 150-200 mm in Puttalam, Kurunegala, Anuradhapura, Gampaha, Colombo, Kalutara. Kegalle and Ratnapura districts; up to 100-150 mm in Galle, Matara, Nuwara Eliya, Kandy, Polonnaruwa, Ampara, Badulla and Monaragala districts; and up to 50-75 mm in rest of the island. Above average rainfall up to 100-200 mm is shown for Ampara district; up to 50-100 mm in Puttalam, Kurunegala, Anuradhapura. Matale, Gampaha, Colombo, Kalutara, Kegalle, Ratnapura, Monaragala, Badulla and Batticaloa districts; and up to 25-50 mm in most parts of the island.

Monthly Monitoring

During September – Above average rainfall conditions up to 450 mm were experienced by Gampaha district; up to 360 mm in Puttalam, Colombo, Kalutara, Galle, Matara, Hambantota, Monaragala and Ratnapura districts; up to 240 mm in Kurunegala, Kegalle, Jaffna, Kilinochchi, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Batticaloa, Badulla, Ampara, Kandy and Nuwara Eliya districts; and up to 120 mm in rest of the island. The CPC Unified Precipitation Analysis tool shows up to 750 mm of total rainfall in Gampaha, Colombo, Kalutara and Galle districts; up to 500 mm in Kurunegala, Puttalam, Kegalle, Ratnapura, Matara, Hambantota and Monaragala districts; up to 300 mm in Nuwara Eliya and Badulla districts; and up to 200 mm in Kandy, Matale, Ampara and Batticaloa districts.

Ocean State (Text Courtesy IRI)

Pacific sea state: October 18, 2019

SSTs in the east-central Pacific maintained ENSO-neutral levels during September and early October, despite some warming in October. Patterns in some atmospheric variables show weak El Niño



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conditions, but this is attributed to intraseasonal variability and the collective assessment is for ENSO-neutral conditions. Model forecasts generally favor ENSO-neutral through autumn, winter and spring, with slightly higher chances for El Niño than La Niña. The official CPC/IRI outlook is consistent with these model forecasts.

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 23rd – 29th Oct: Total rainfall more than 135 mm in Jaffna, Kilinochchi, Mullaitivu, Mannar, Vavuniya, Anuradhapura, Polonnaruwa, Batticaloa. Puttalam and Kurunegala districts; up to 115-125 mm in Gampaha, Colombo, Matale, Kegalle and Ratnapura districts; and up to 95-105 mm in Ampara, Kandy, Galle and Matara districts.

From 30th Oct – 5th Nov: Total rainfall more than 135 mm in Puttalam, Kurunegala, Gampaha, Colombo, Mannar, Kilinochchi and Jaffna districts; up to 125-135 mm Vavuniya, Anuradhapura, Matale, Kandy, Kegalle, Ratnapura, Galle and Matara districts; and up to 105-115 mm in Trincomalee and Polonnaruwa districts.

NOAA Model Forecast:

From 23rd – 28th Oct: Total rainfall up to 200 mm is expected in Jaffna district; up to 150 mm in Kilinochchi, Mannar, Millaitivu, Vavuniya and Trincomalee districts; up to 100 mm in Puttalam, Anuradhapura, Batticaloa. Ampara, Monaragala and Hambantota districts; and up to 75 mm in rest of 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 following 5 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.



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Weekly Hydro- Meteorological Report for Sri Lanka

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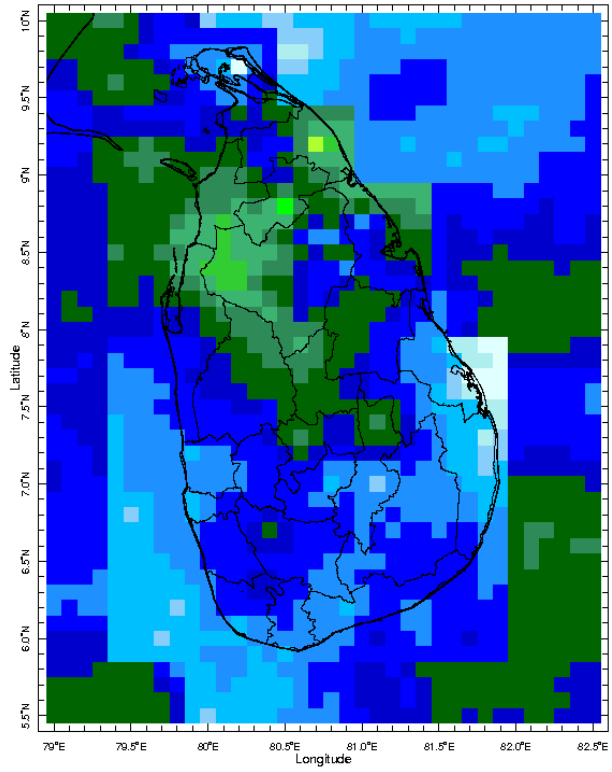
2. Predictions

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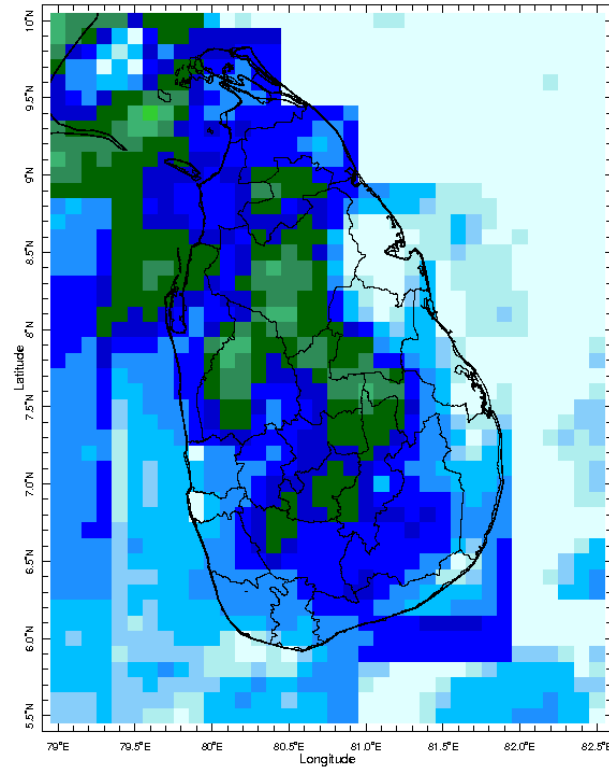
MONITORING

Daily Rainfall Monitoring

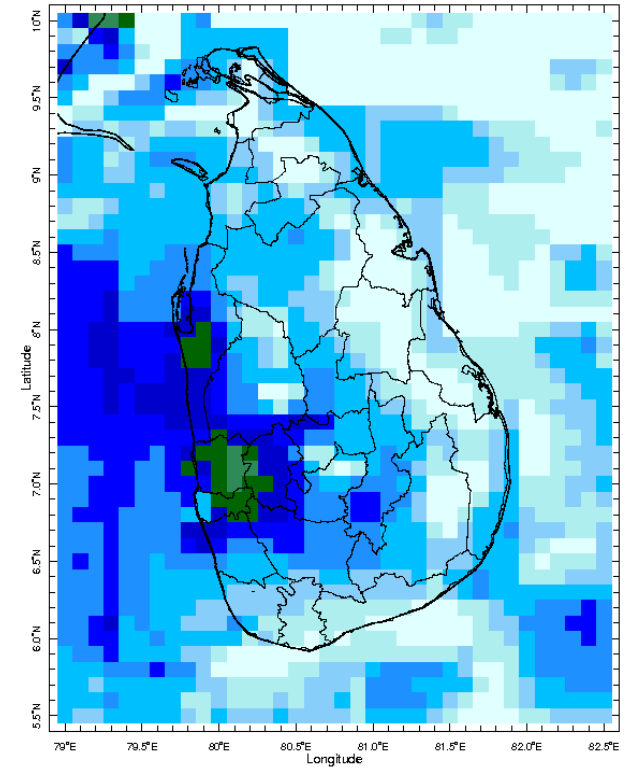
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



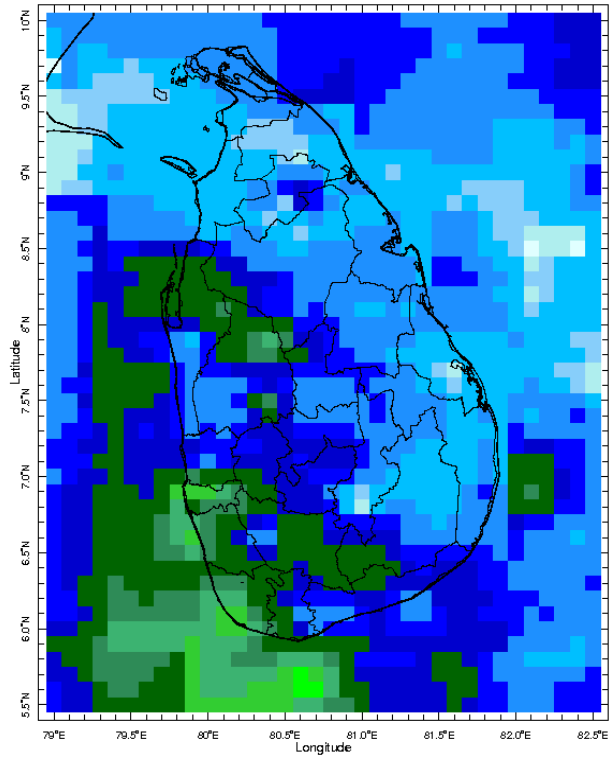
16 Oct 2019



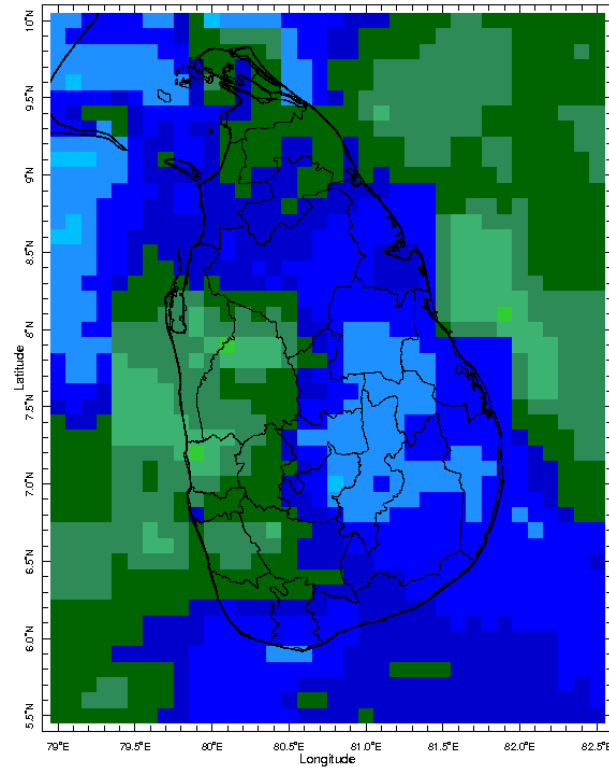
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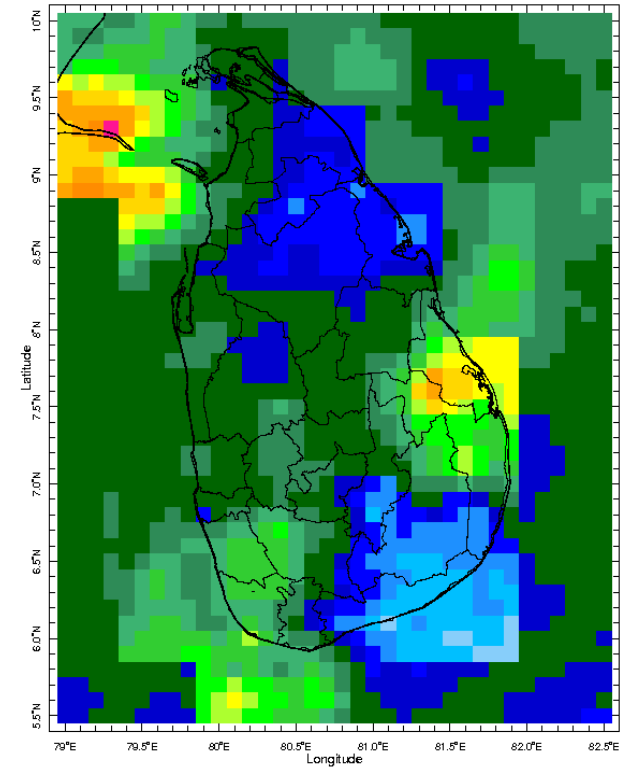
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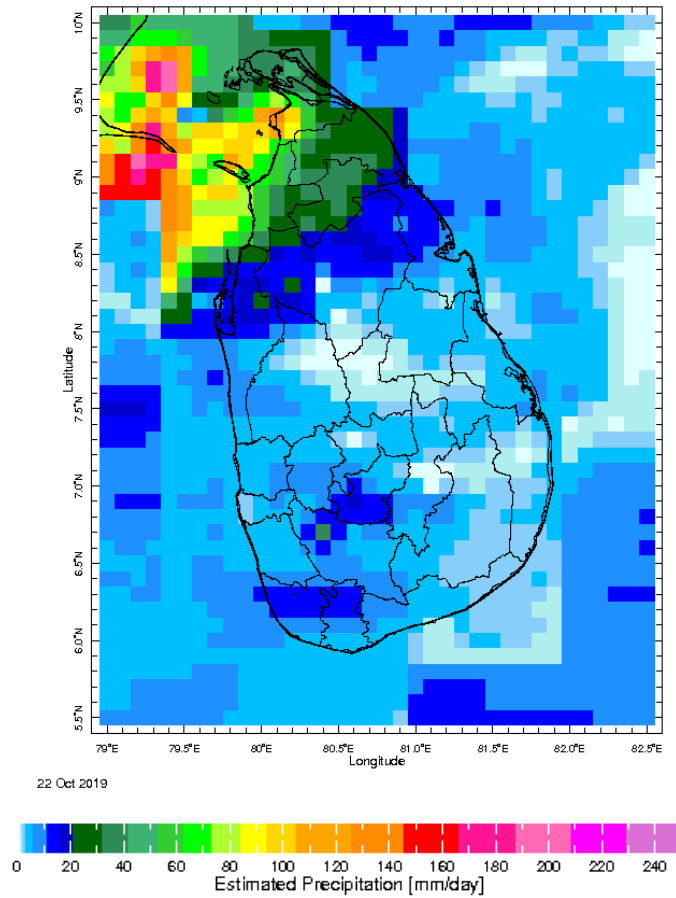
19 Oct 2019



20 Oct 2019

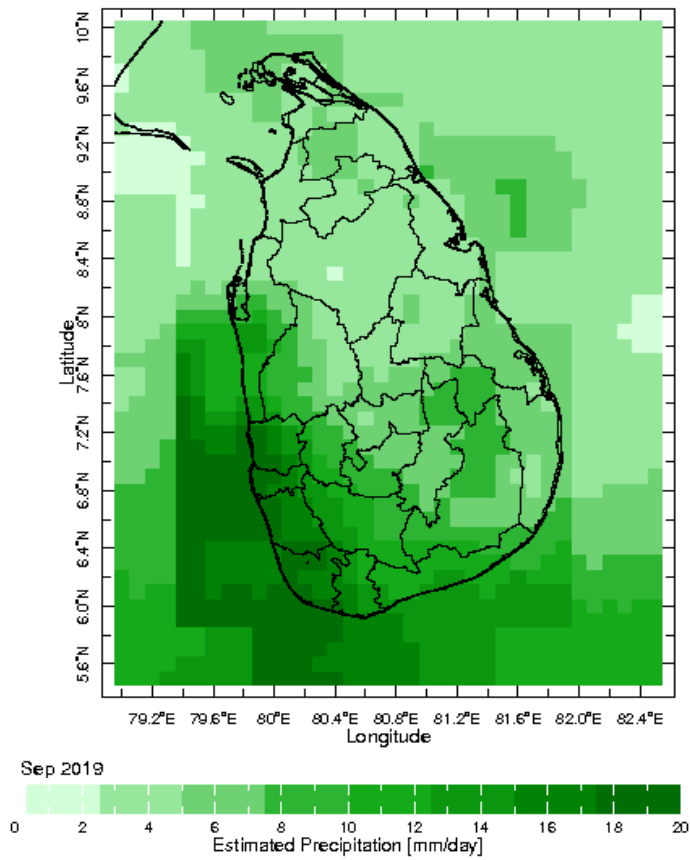


21 Oct 2019

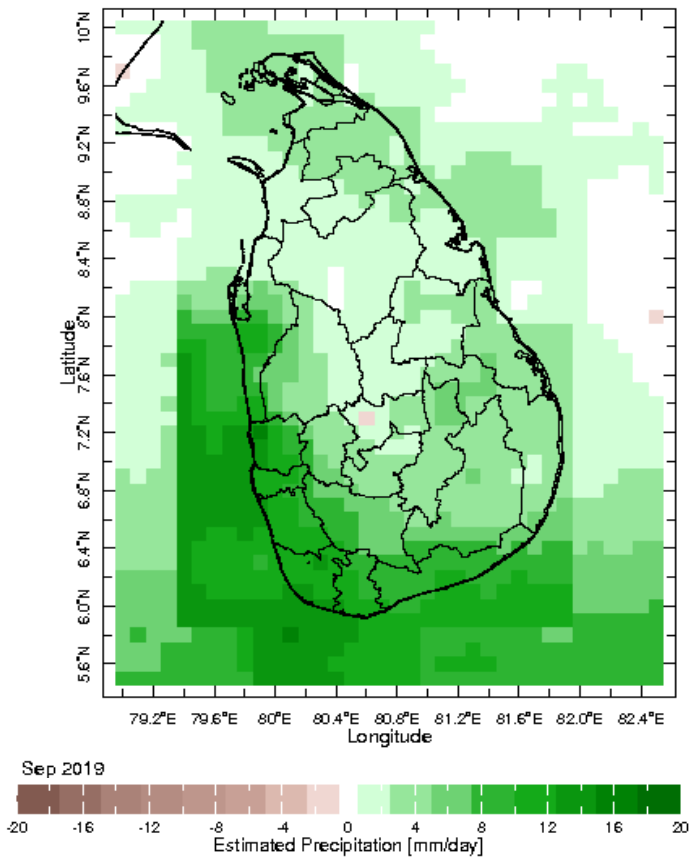


Monthly Rainfall Monitoring

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

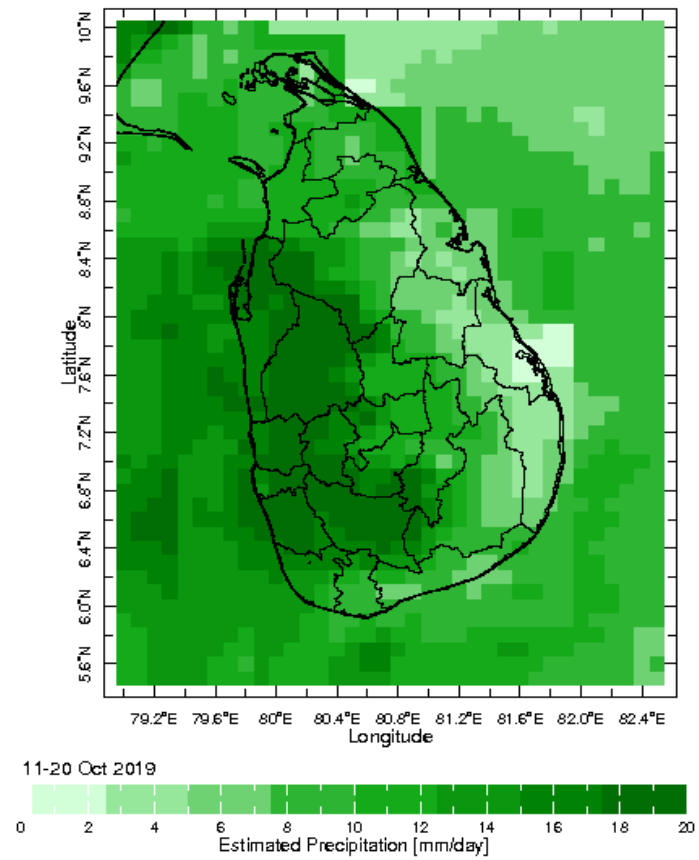
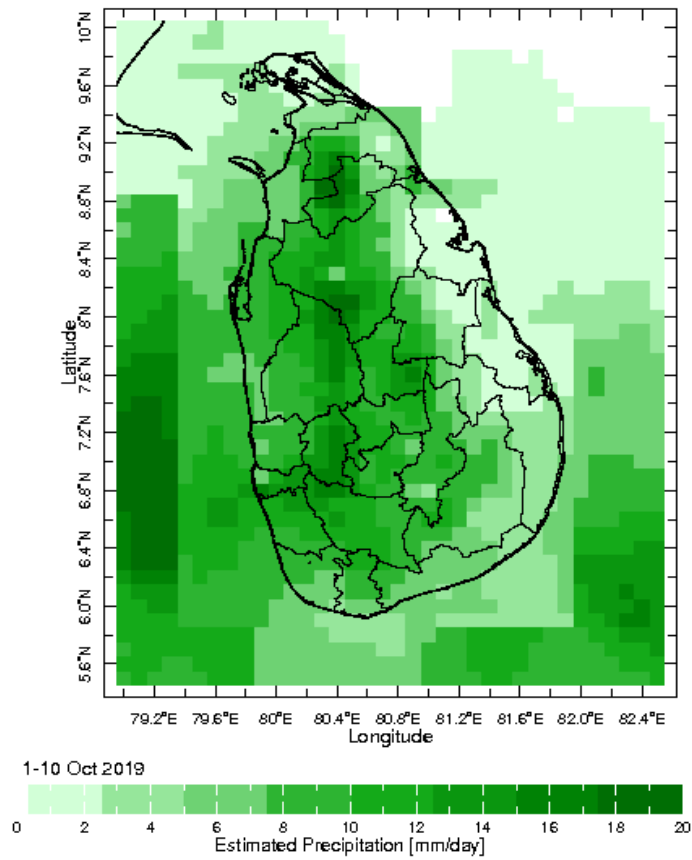


Monthly Average



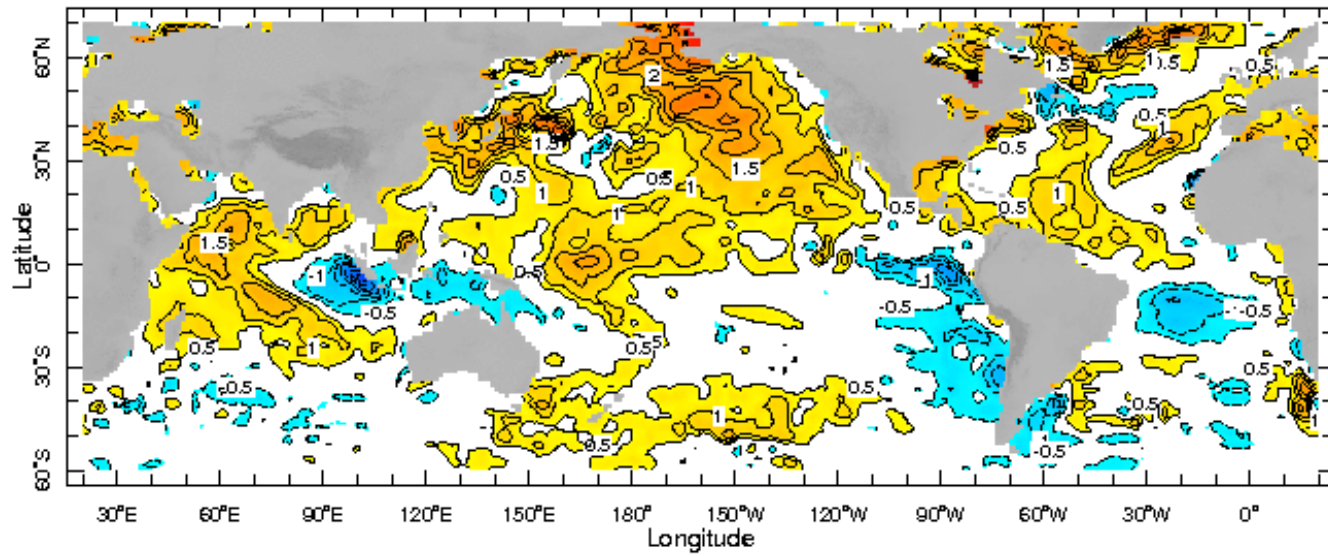
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

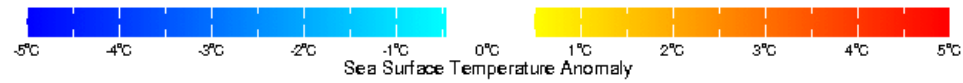


Weekly Average SST Anomalies

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



9 Oct 2019

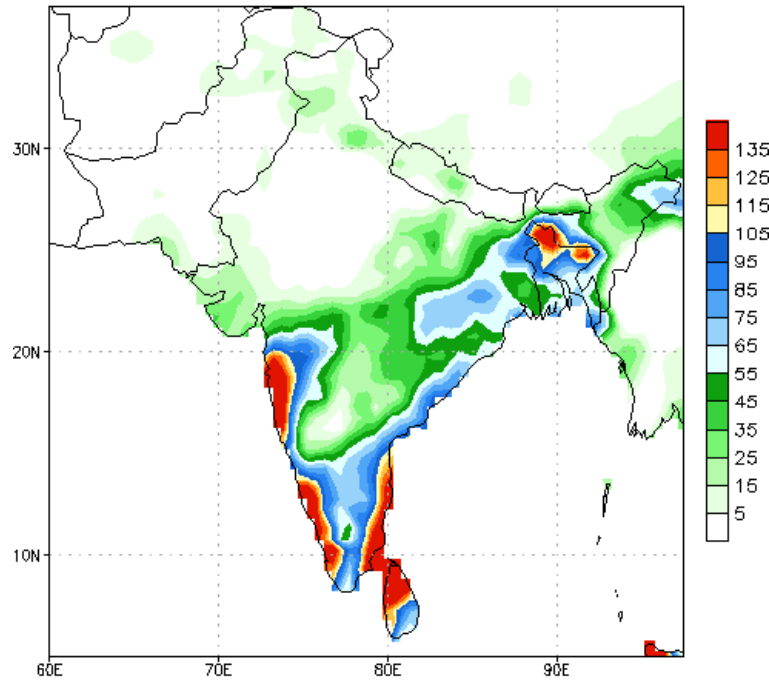


WORLDBATH topography

PREDICTIONS

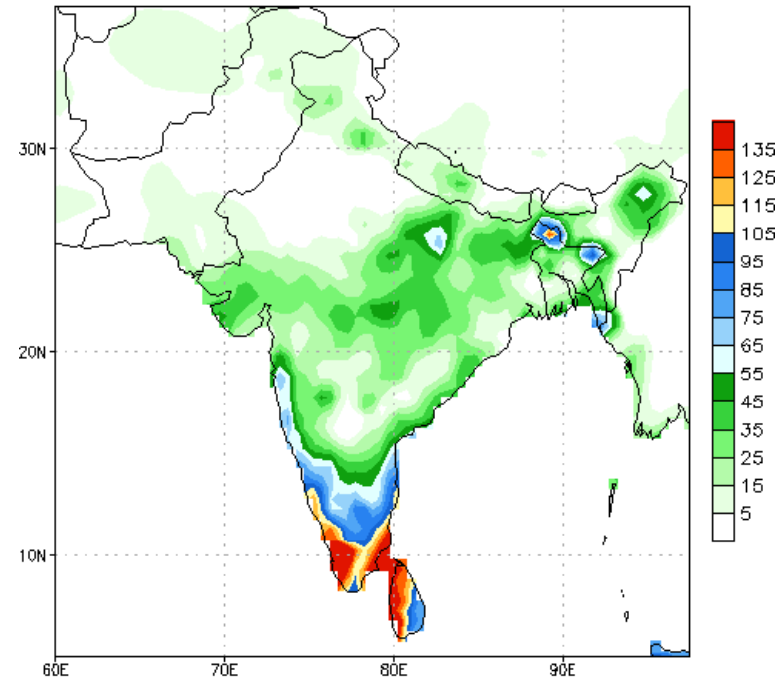
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 23Oct2019
23Oct2019-29Oct2019 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 23Oct2019
30Oct2019-05Nov2019 Accumulation

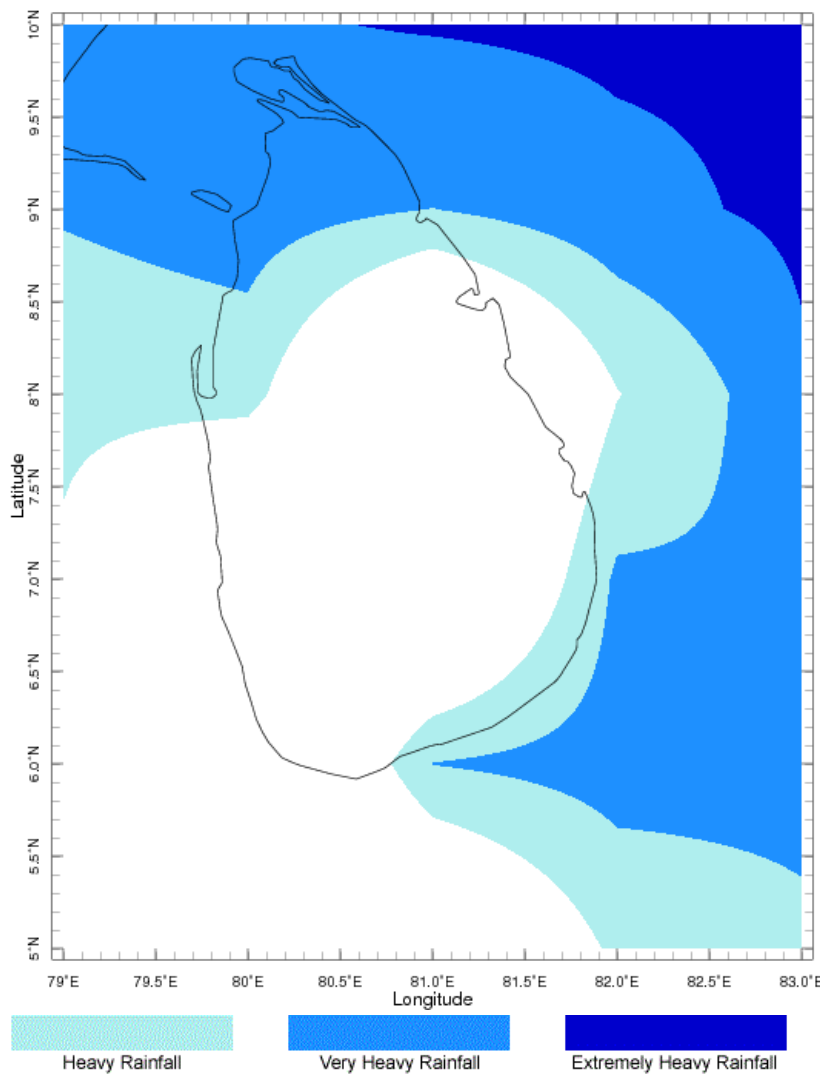


Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

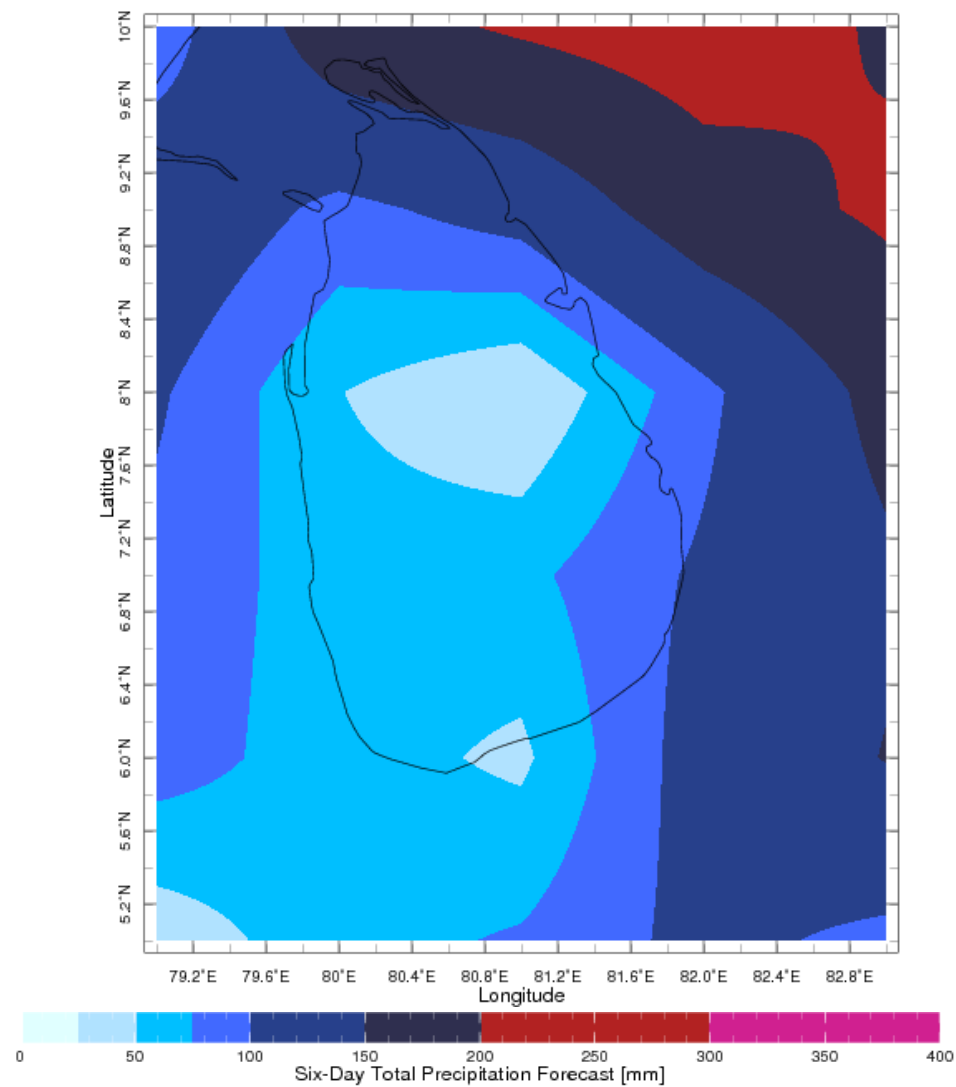
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 23-28 Oct 2019 Issued 0000 23 Oct 2019



Extreme Rainfall Forecast

Forecast for 23-28 Oct 2019 Issued 0000 23 Oct 2019



Total Six Day Precipitation Forecast