

**21 November
2019**

EXPERIMENTAL CLIMATE MONITORING AND PREDICTION

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HIGHLIGHTS

Rainfall Forecast



- The NOAA weekly rainfall forecast predicts up to 100 mm of total rainfall in northern and eastern regions of the island during 20 – 25 Nov.

Monitored Rainfalls



- Between 13 - 19 Nov: up to 70 mm of rainfall was recorded in Anuradhapura, Batticaloa, Gampaha and Colombo districts on the 18th.

Monitored Wind



- From 12 - 18 Nov: up to 18 km/h, easterly 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
13th November	No Rainfall.
14th November	Up to 30 mm in Polonnaruwa district; and up to 20 mm in Kalutara, Puttalam and Batticaloa districts.
15th November	Up to 50 mm in Trincomalee district; up to 30 mm in Kurunegala and Nuwara Eliya districts; up to 20 mm in Mullaitivu, Anuradhapura, Polonnaruwa, Matale, Kandy, Kegalle, Gampaha, Ratnapura, Badulla, Monaragala and Ampara districts; and up to 10 mm most parts of the island.
16th November	Up to 50 mm in Puttalam, Kurunegala and Nuwara Eliya districts; up to 30 mm in Jaffna, Kilinochchi, Mullaitivu, Mannar, Anuradhapura, Polonnaruwa, Matale, Kandy, Colombo, Badulla and Monaragala districts; up to 20 mm in Kegalle, Kalutara, Colombo, Ratnapura, Galle, Hambantota, Ampara and Mullaitivu districts; and up to 10 mm most parts of the island.



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

Total Rainfall for the Past Week

The RFE 2.0 tool shows total up to 75-100 mm in Puttalam, Kurunegala, Gampaha, Colombo, Kalutara and Ratnapura districts; up to 50-75 mm in Anuradhapura, Badulla, Nuwara Eliya, Kegalle and Galle districts; and up to 25-50 mm in most parts of the island. Above average rainfall up to 25-50 mm is shown for Puttalam, Gampaha, Colombo and southern regions of Kurunegala district. Below average rainfall up to 50-100 mm is shown for Jaffna, Trincomalee, Polonnaruwa, Batticaloa, Kandy and Badulla districts; up to 25-50 mm in most parts of the island.

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.

Indian Ocean State

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



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Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 20th – 26th Nov: Total rainfall up to 125 mm in Batticaloa and Ampara districts; up to 85-95 mm in Jaffna, Trincomalee, Badulla, Monaragala, Ratnapura, Galle and Matara districts; and up to 75-85 mm in Puttalam, Kilinochchi, Mullaitivu, Kegalle and Hambantota districts.

From 27th Nov – 3rd Dec: Total rainfall more than 135 mm in Jaffna, Kilinochchi, Batticaloa and Ampara districts; up to 125-135 mm Mannar district; and up to 115-125 mm in Puttalam, Kurunegala, Ratnapura, Galle, Trincomalee, Polonnaruwa, Badulla and Monaragala districts.

NOAA Model Forecast:

From 20th – 25^h Nov: Total rainfall up to 100 mm is expected in Jaffna, Kilinochchi, Mullaitivu, Vavuniya, Anuradhapura and Trincomalee districts; and up to 75 mm in most parts of the island.

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.



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Weekly Hydro- Meteorological Report for Sri Lanka

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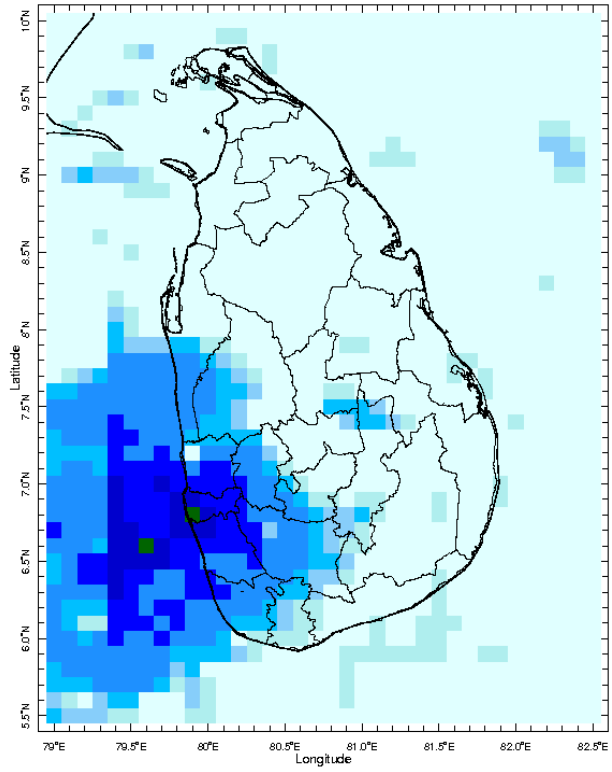
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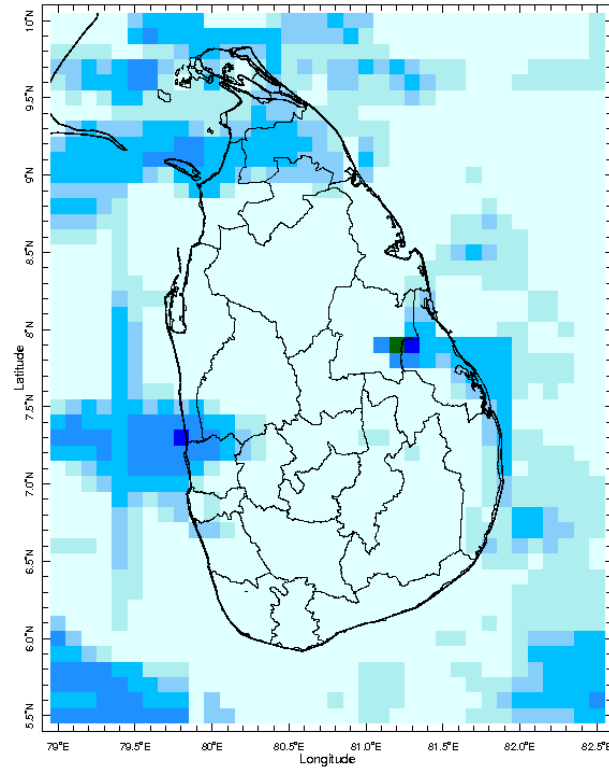
MONITORING

Daily Rainfall Monitoring

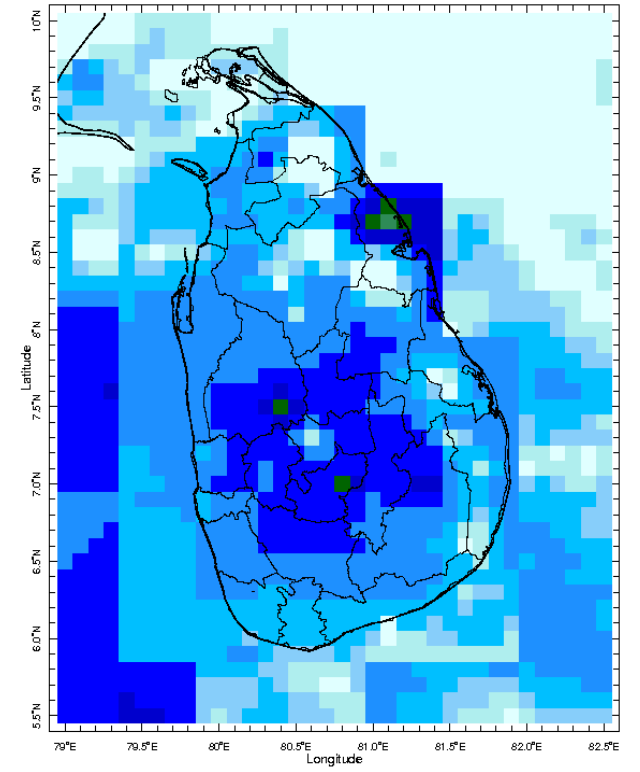
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



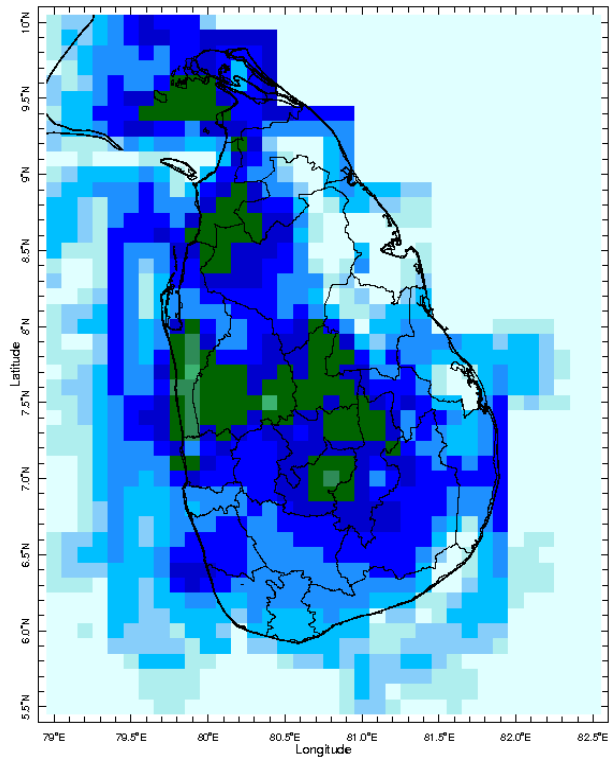
13 Nov 2019



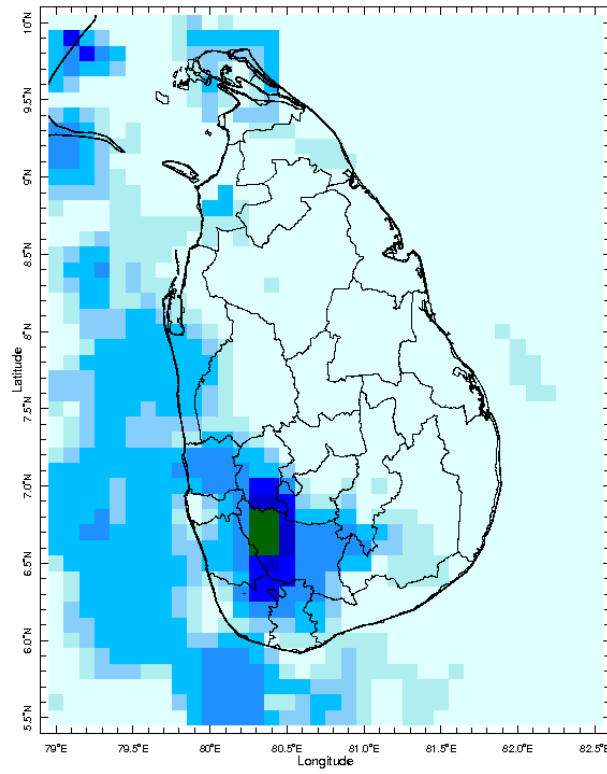
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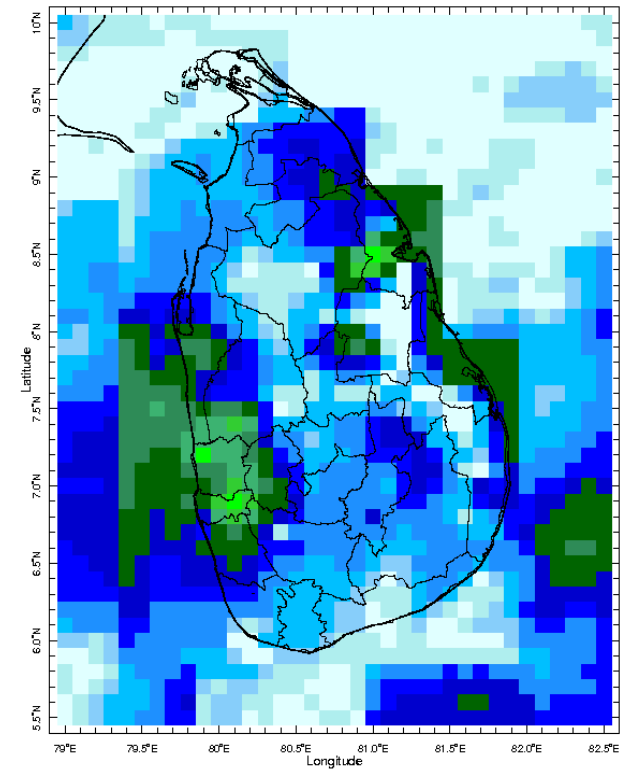
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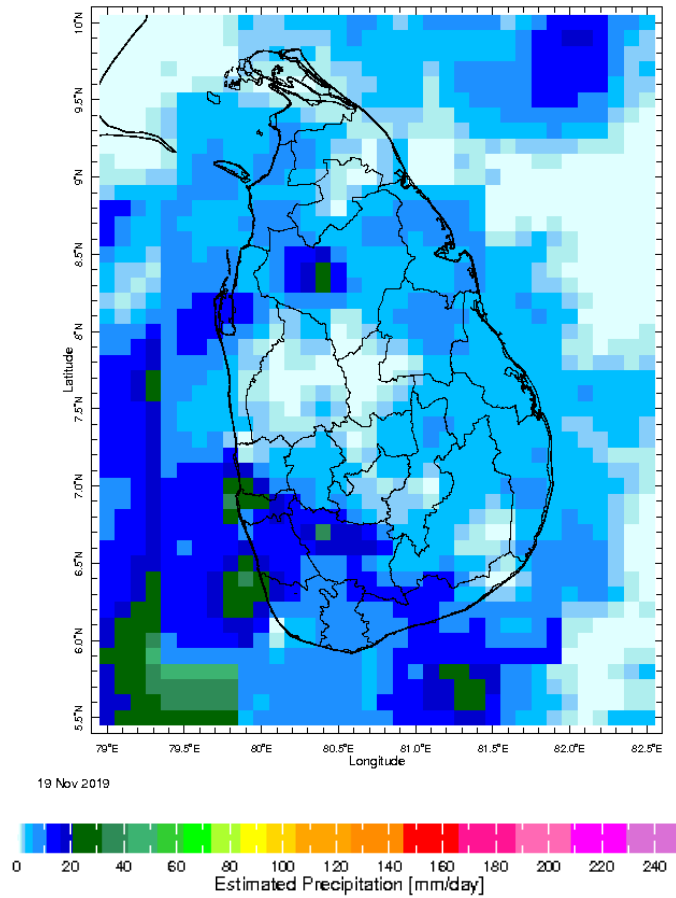
16 Nov 2019



17 Nov 2019

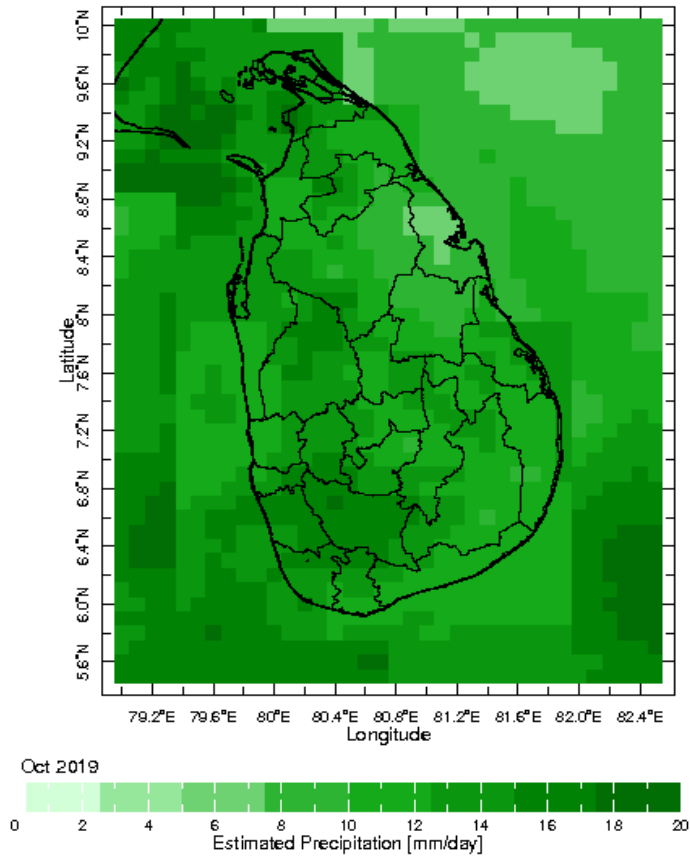


18 Nov 2019

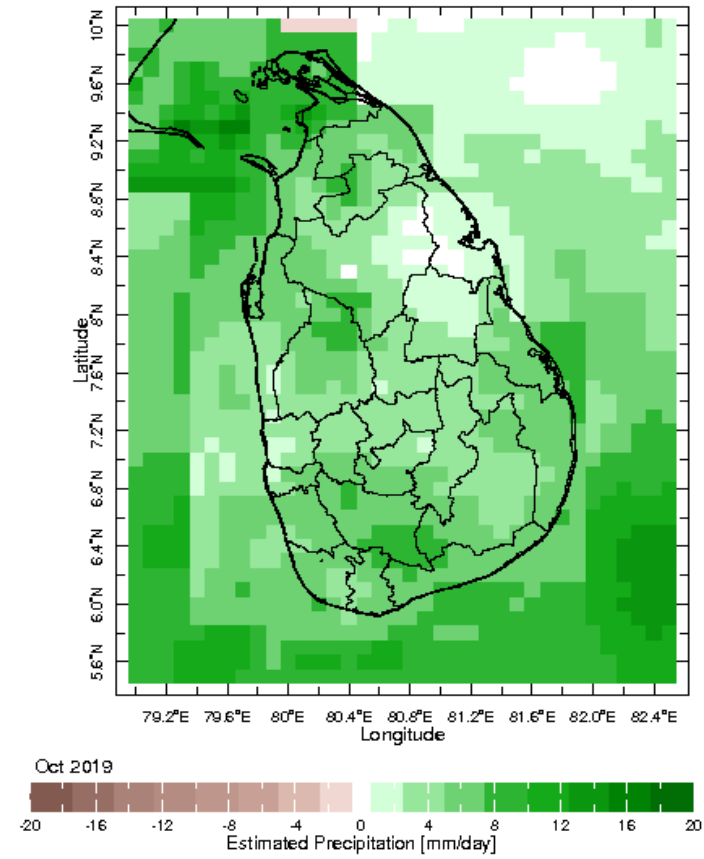


Monthly Rainfall Monitoring

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

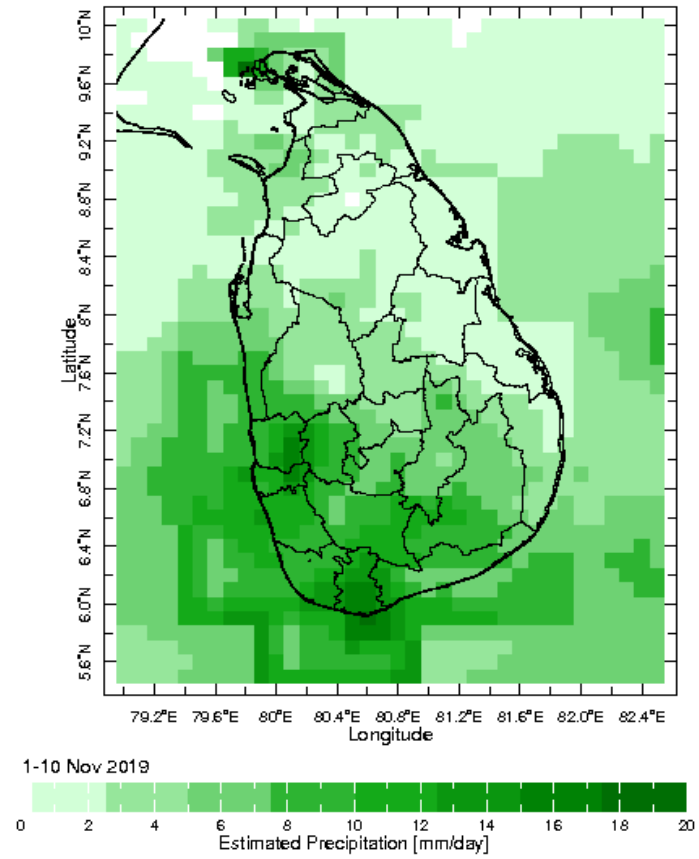
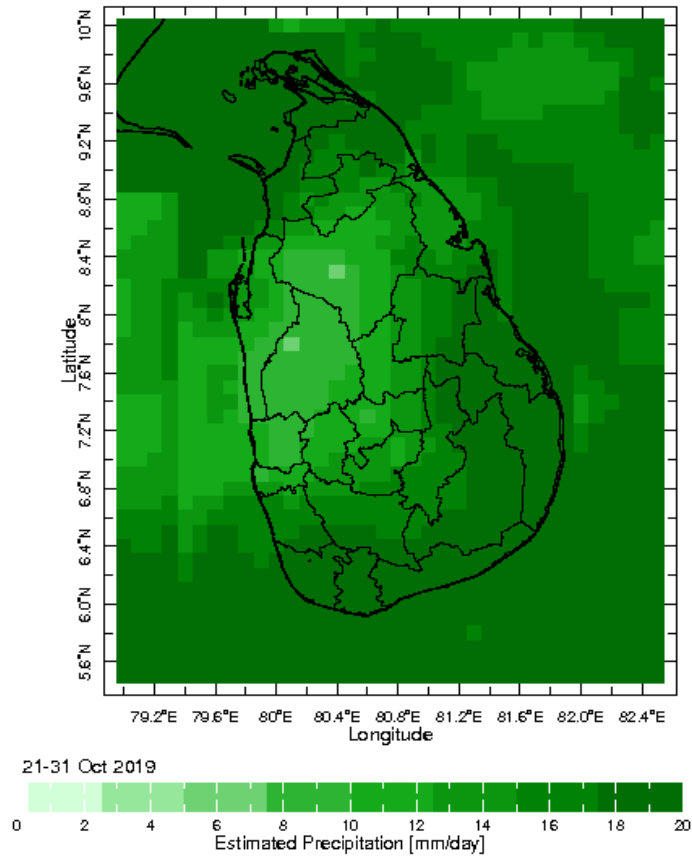


Monthly Average



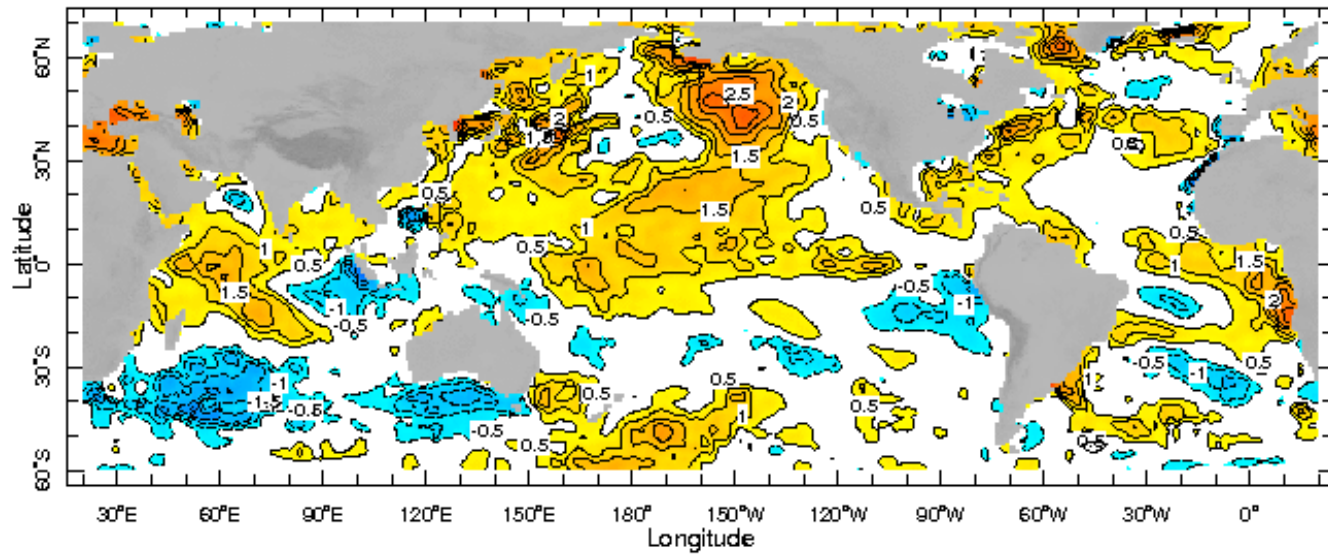
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

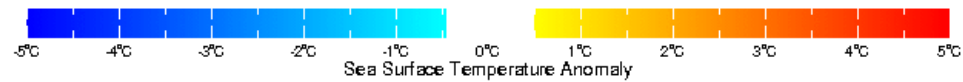


Weekly Average SST Anomalies

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



13 Nov 2019

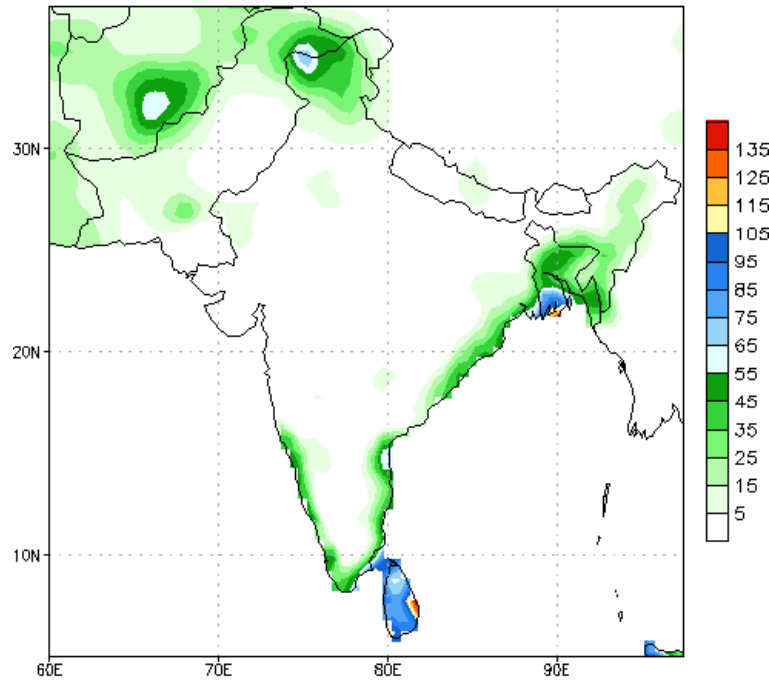


WORLD BATH topography

PREDICTIONS

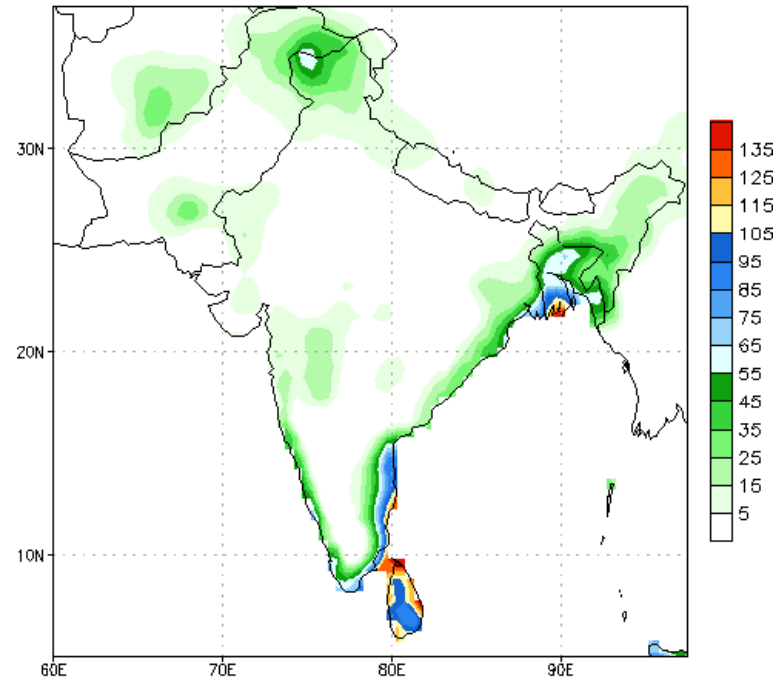
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 20Nov2019
20Nov2019-26Nov2019 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 20Nov2019
27Nov2019-03Dec2019 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.

