

Experimental Climate Monitoring and Prediction

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Highlights

- The IRI weekly rainfall forecast predicts total rainfall up to 200 mm in the eastern coastal regions of the island during 5 – 10 Dec.
- Between 27 Nov - 3 Dec: up to 90 mm of rainfall was recorded in Mullaitivu district on the 2nd.
- From 25 Nov – 1 Dec: Nuwara Eliya district recorded a minimum temperature between 10-15 °C and most parts of the island recorded a maximum temperature between 30-35 °C.
- From 27 Nov – 3 Dec: up to 25 km/h, easterly winds were experienced by the southern regions of the island.
- 0.5 °C above average sea surface temperature was observed in the southern seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On November 27th, Monaragala and Ampara districts received up to 50 mm of rainfall; Badulla and Batticaloa districts up to 30 mm; and Matale and Ratnapura districts up to 20 mm. On the 28th, Colombo, Kalutara and several regions of Anuradhapura districts received up to 10 mm of rainfall. On the 29th, Mullaitivu, Vavuniya, Ampara and Colombo districts received up to 50 mm of rainfall; Anuradhapura, Polonnaruwa and Gampaha districts up to 30 mm; and Jaffna, Trincomalee and Ratnapura districts up to 20 mm. On the 30th, several regions of Kalutara, Ratnapura and Ampara district received up to up to 5 mm rainfall. On December 1st, Jaffna and Kilinochchi districts received up to 5 mm of rainfall. On the 2nd, Mullaitivu district received up to 90 mm of rainfall; Mannar district up to 60 mm; and Puttalam district up to 30 mm. On the 3rd, Jaffna and Ratnapura districts received up to 50 mm of rainfall; Kilinochchi, Polonnaruwa, Matale, Kegalle, Nuwara Eliya, Gampaha, Colombo and Kalutara districts up to 30 mm; Mannar, Mullaitivu, Vavuniya, Puttalam, Anuradhapura, Kurunegala, Kandy, Gampaha, Galle, Matara, Hambantota, Monaragala and Ampara districts up to 20 mm; and rest of the island up to 10 mm.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall up to 75-100 mm in Mullaitivu and Trincomalee districts; up to 50-75 mm in Gampaha, Colombo, Kegalle, Ratnapura, Kalutara, Galle and Matale districts; and up to 25-50 mm in Jaffna, Kilinochchi, Batticaloa, Anuradhapura, Polonnaruwa, Ampara and Nuwara Eliya districts. Above average rainfall up to 50-100 mm is shown for Galle, Mullaitivu and Trincomalee districts; and up to 10-25 mm in Colombo, Kalutara and northern regions of Ratnapura district. Below average rainfall up to 25-50 mm is shown for Anuradhapura, Kurunegala, Ampara, Badulla, Monaragala, Hambantota and southern regions of Ratnapura district; and up to 10-25 mm for rest of the island.

Monthly Monitoring: During November - above average rainfall conditions up to 150 mm were experienced by Gampaha district and southern regions of Kurunegala and western regions of Kegalle districts; and up to 60 mm in Batticaloa district and several regions of Jaffna, Trincomalee and Ampara districts. Badulla and Monaragala districts experienced below average rainfall up to 360 mm; Vavuniya, Anuradhapura, Puttalam, Kandy, Nuwara Eliya, Ratnapura, Colombo, Kalutara, Galle, Matara and Hambantota districts up to 240 mm; and most parts of the island up to 180 mm. The CPC Unified Precipitation Analysis tool shows up to 500 mm of total rainfall in Trincomalee, Kurunegala, Gampaha, Colombo and Kegalle districts; and up to 300 mm in for the rest of the island.

Ocean State (Text Courtesy IRI)

Pacific sea state: November 19, 2018

El Niño-level SSTs were observed in the October average, and the subsurface waters also continued to be markedly warmer than average. However, the atmospheric variables showed mainly ENSO-neutral patterns. Only lower-level wind anomalies averaged weakly westerly in the eastern Pacific—a suggestion of El Niño. The official CPC/IRI outlook calls for an 80% chance of El Niño prevailing during winter, and a 55-60% chance of continuing into spring 2019. An El Niño watch is in effect. New forecasts of statistical and dynamical models collectively show continuing El Niño-level SSTs, most likely weak to moderate in strength, continuing through spring.

Indian Ocean State

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

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 5th - 11th Dec: Total rainfall more than 135 mm in Trincomalee, Batticaloa, Polonnaruwa, Matale, Kandy, Badulla, Monaragala, Ampara and Hambantota districts; up to 125-135 mm in Anuradhapura and Trincomalee districts; up to 115-125 mm in Kegalle and Ratnapura districts; up to 105-115 mm in Gampaha, Colombo, Kalutara, Matara, Galle and Kurunegala districts; 95-105 mm in Puttalam and Mullaitivu districts; and up to 85-95 mm in most parts of the island.

From 12th - 18th Dec: Total rainfall up to 95 mm in Jaffna, Trincomalee, Polonnaruwa and Ampara districts; up to 75-85 mm in Kilinochchi, Mannar, Mullaitivu, Anuradhapura, Vavuniya, Matale, Badulla and Monaragala districts; 65-75 mm in Kurunegala, Kandy, Nuwara Eliya, Kegalle and Gampaha districts; 55-65 mm in most parts of the island.

IMD NCMWRF Forecast:

7th Dec: Up to 160 mm of rainfall in Matale, Ampara and Galle districts; up to 80 mm in Anuradhapura, Trincomalee, Puttalam and Ratnapura districts; up to 40 mm in Badulla, Matara, Hambantota, Colombo, Gampaha, Kurunegala and Mannar districts; and up to 10 mm in most parts of the island.

8th Dec: Up to 160 mm in Mullaitivu, Vavuniya, Ratnapura, Galle, Matara and Hambantota districts; up to 80 mm in Trincomalee and Gampaha districts; up to 40 mm in Mannar, Kilinochchi, Anuradhapura, Polonnaruwa, Kandy, Badulla, Monaragala and Ampara districts; and up to 10 mm in most parts of the island.

IRI Model Forecast:

From 5 – 10 Dec: Total rainfall up to 200 mm in Mullaitivu, Batticaloa, Trincomalee and Ampara, districts; up to 150 mm in Vavuniya, Anuradhapura, Polonnaruwa, Badulla, Monaragala, Hambantota Gampaha, Colombo, Kalutara, Galle, Kegalle and Ratnapura districts; and up to 100 mm in the rest of the island.

MJO based OLR predictions

For the next 15 days:

MJO shall enhance the rainfall in Sri Lanka.

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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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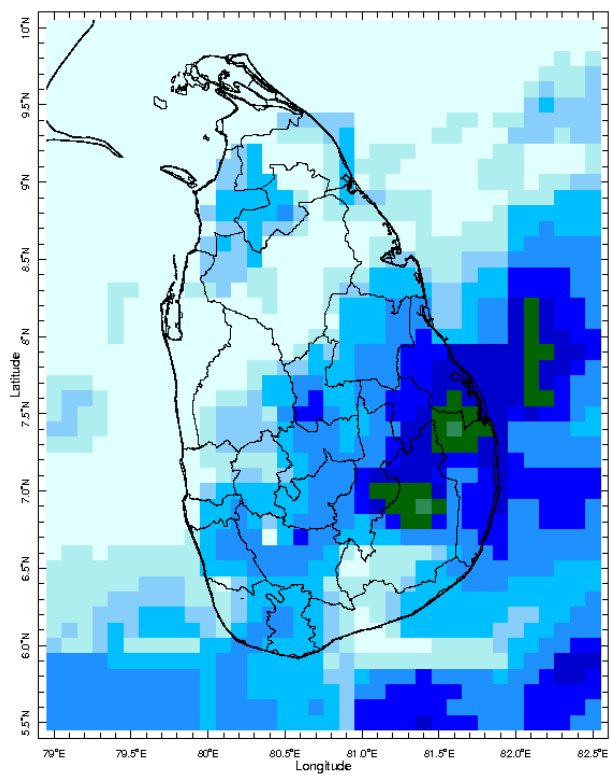
2. Predictions

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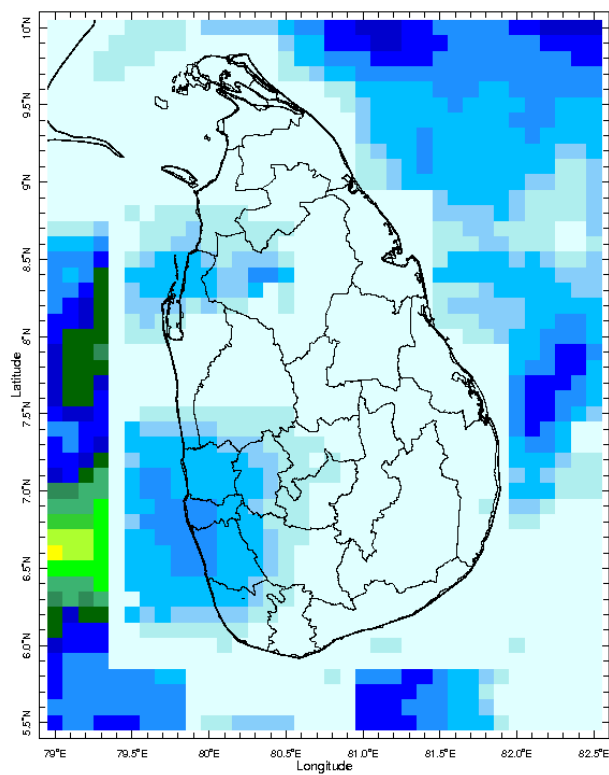
MONITORING

Daily Rainfall Monitoring

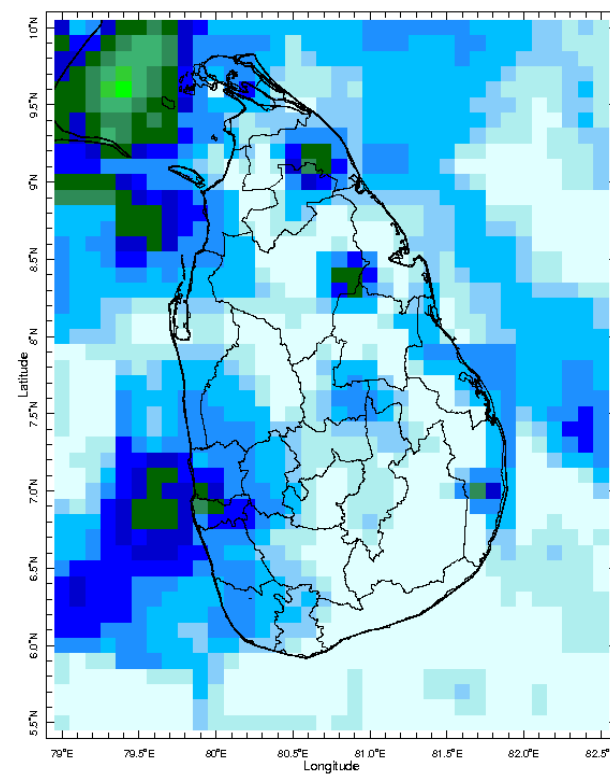
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



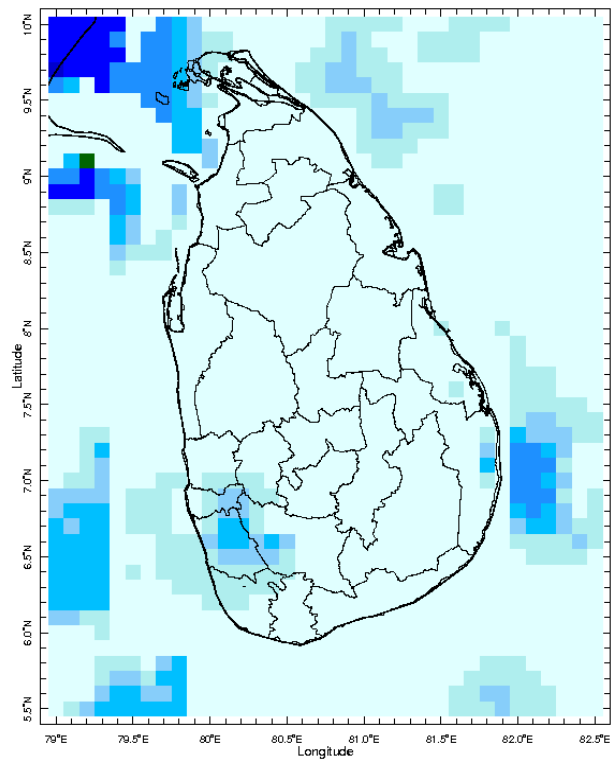
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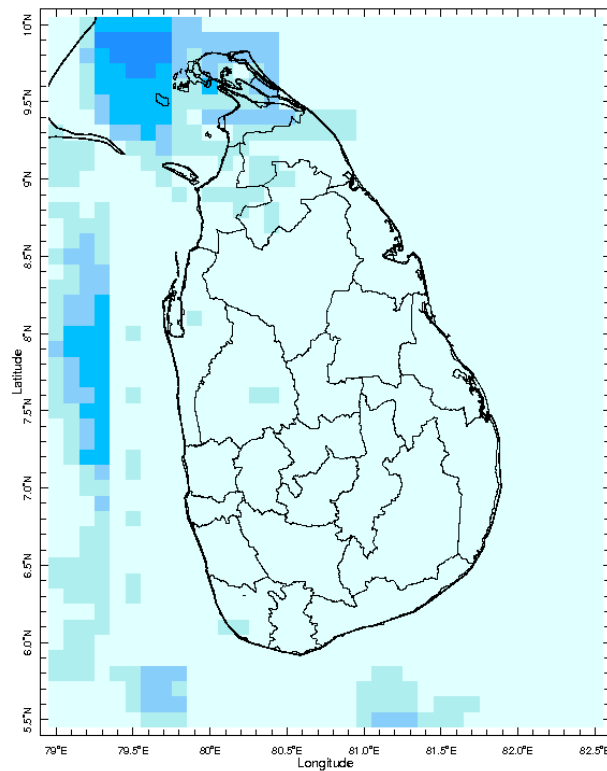
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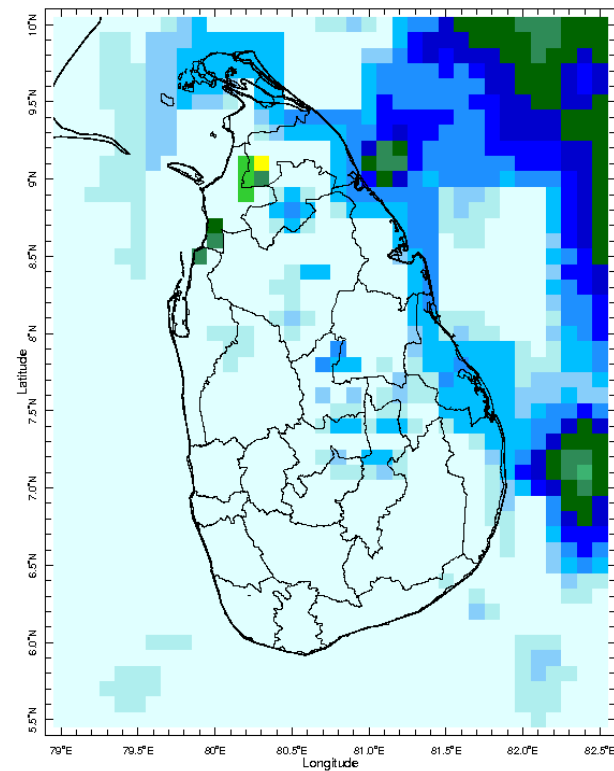
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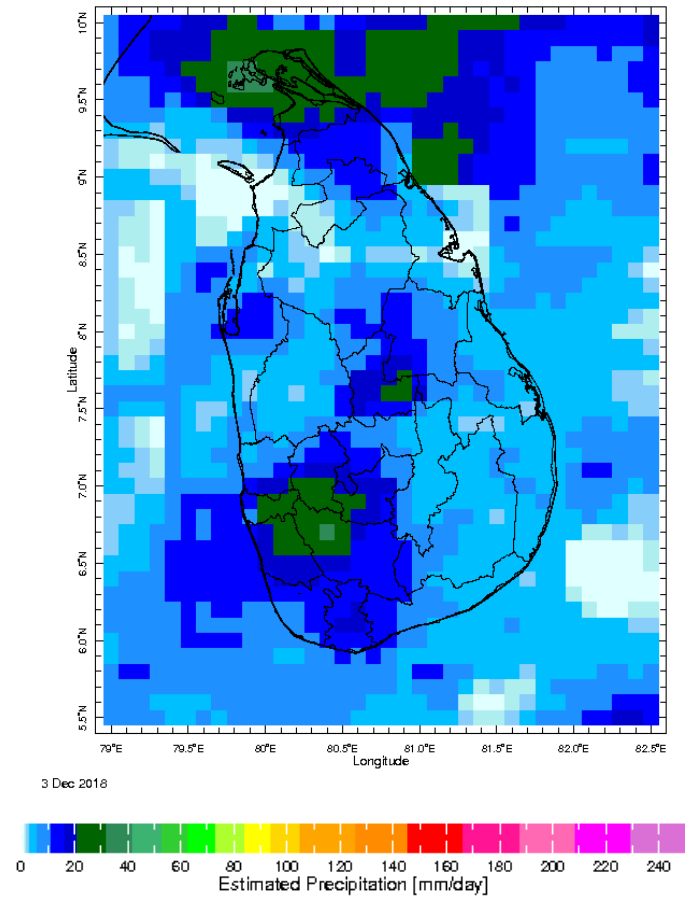
30 Nov 2018



1 Dec 2018

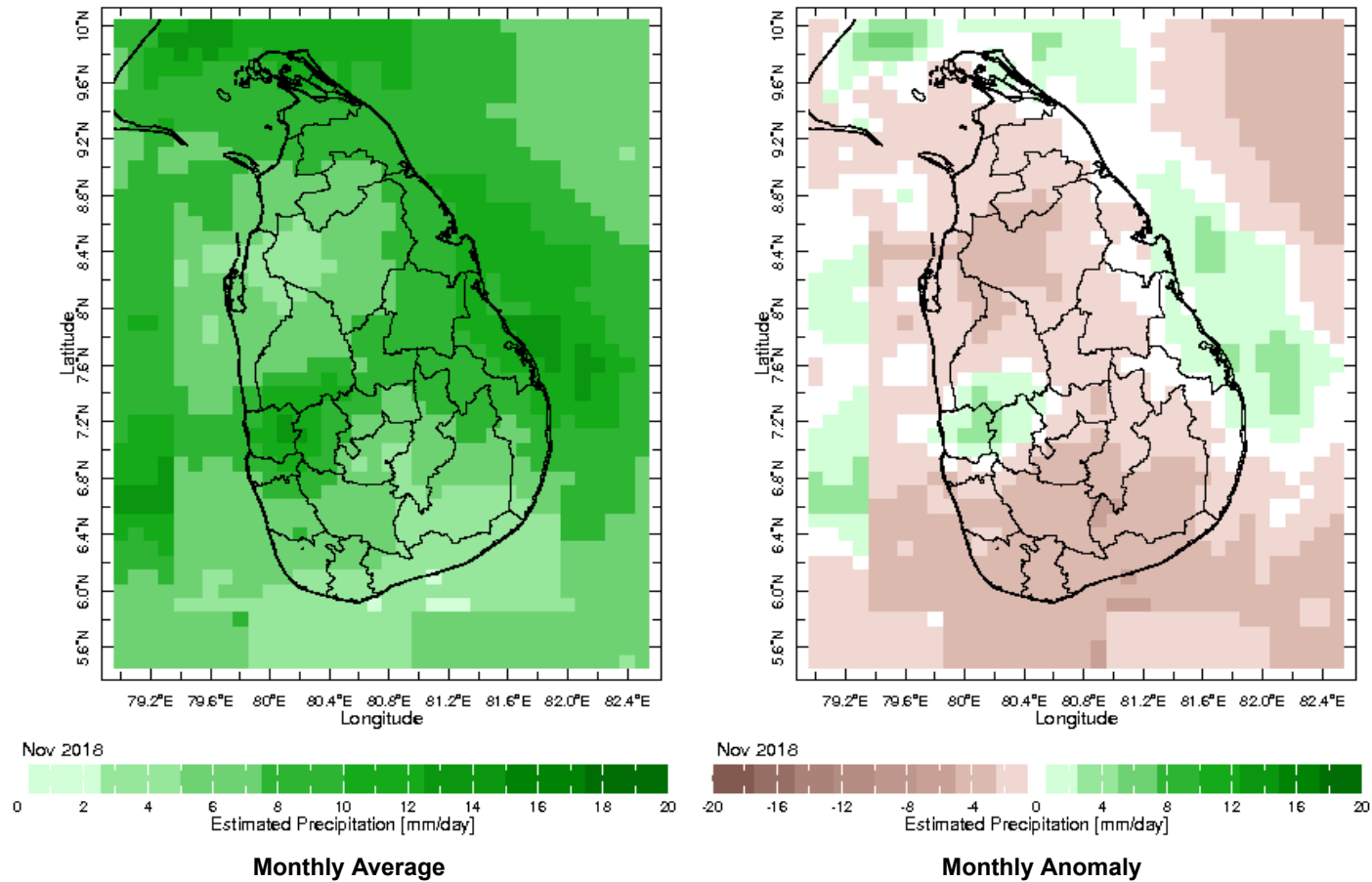


2 Dec 2018

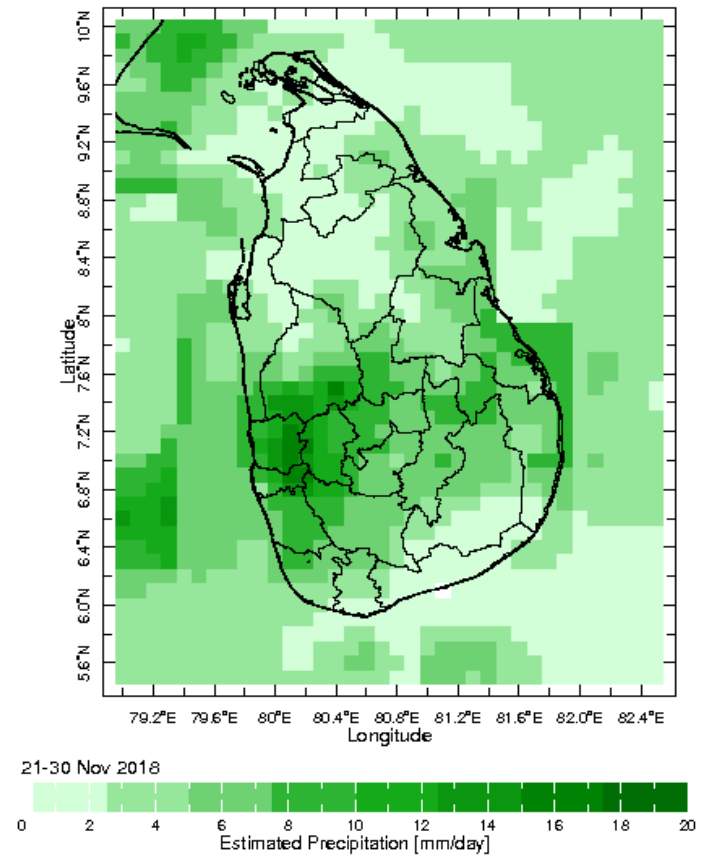
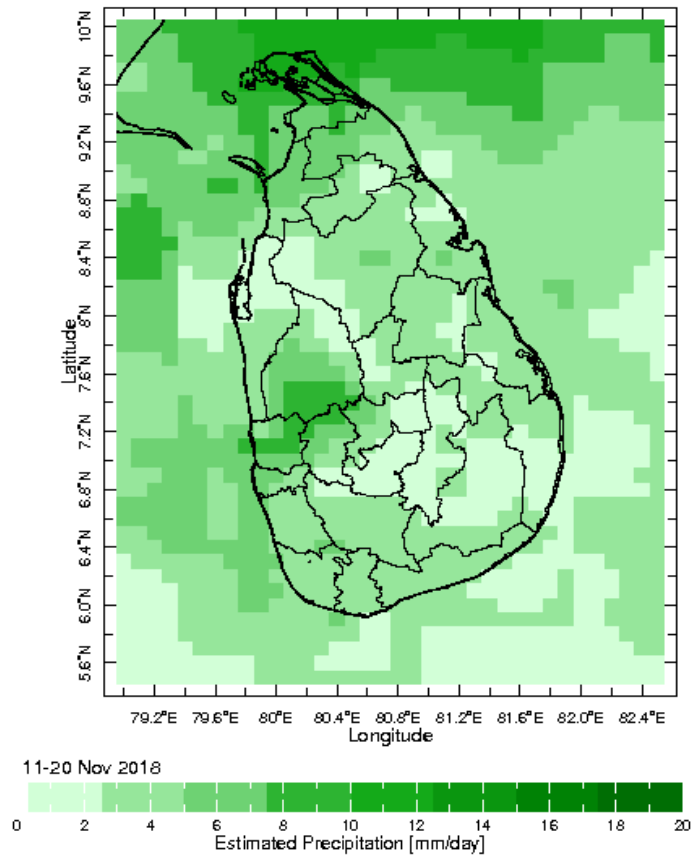


Monthly Rainfall Monitoring

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

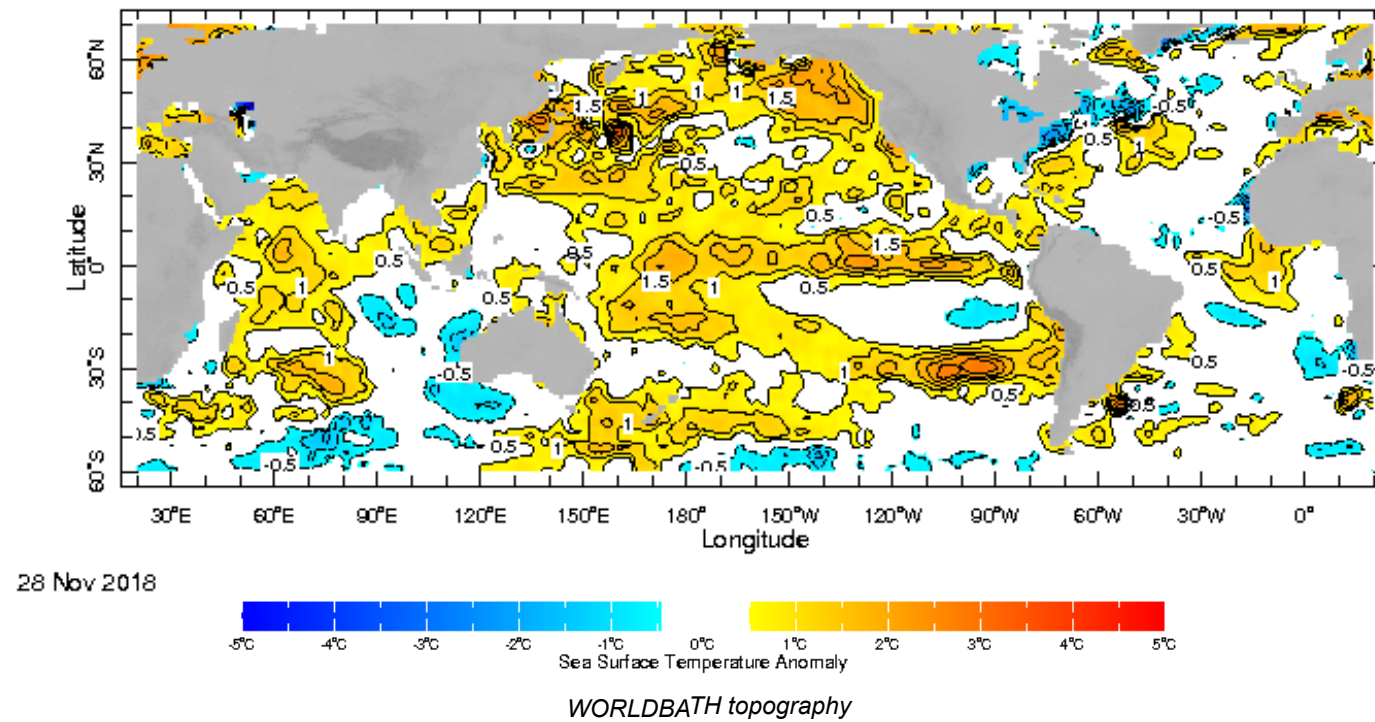


Dekadal (10 Day) Satellite Derived Rainfall Estimates

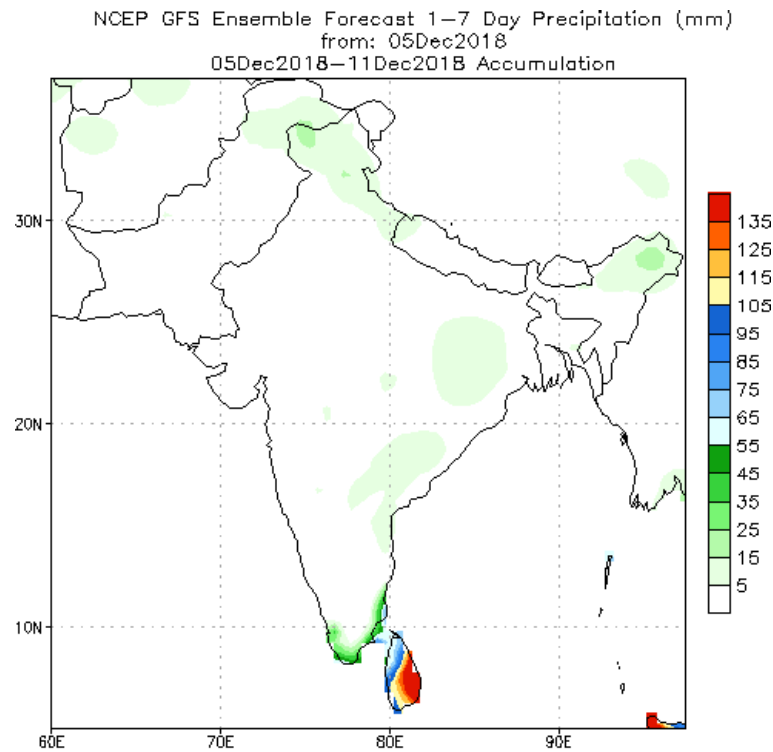


Weekly Average SST Anomalies

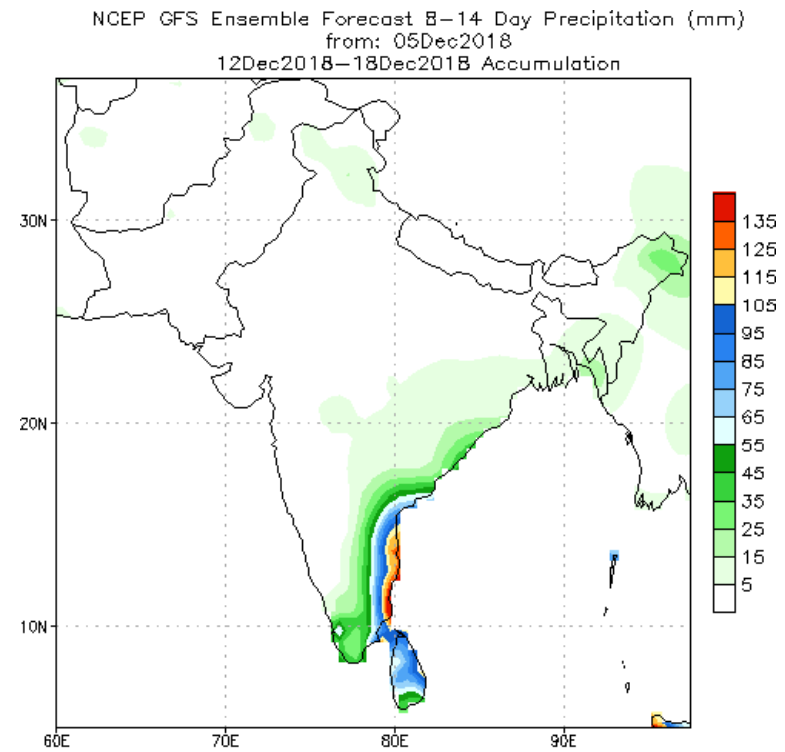
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



NCEP GFS 1- 14 Day prediction



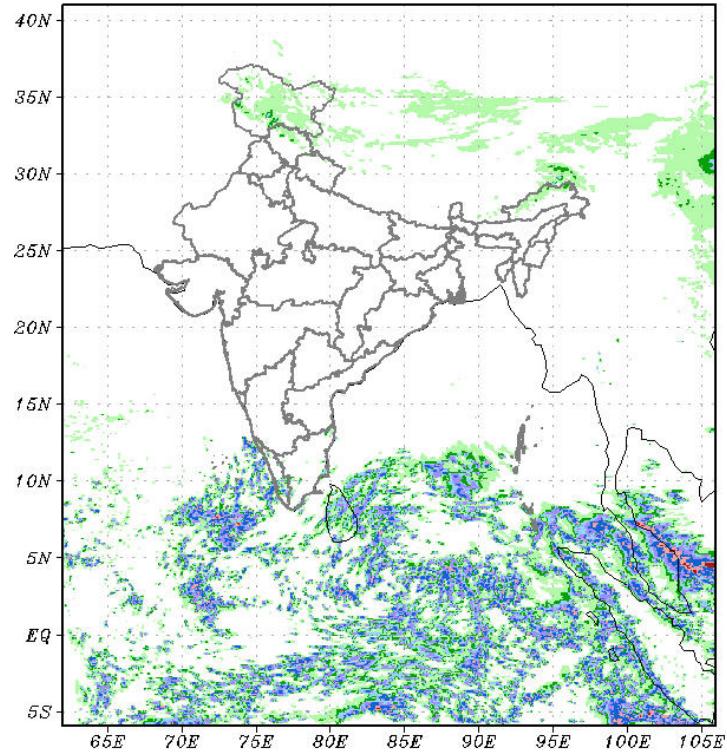
Bias correction based on last 30-day forecast error



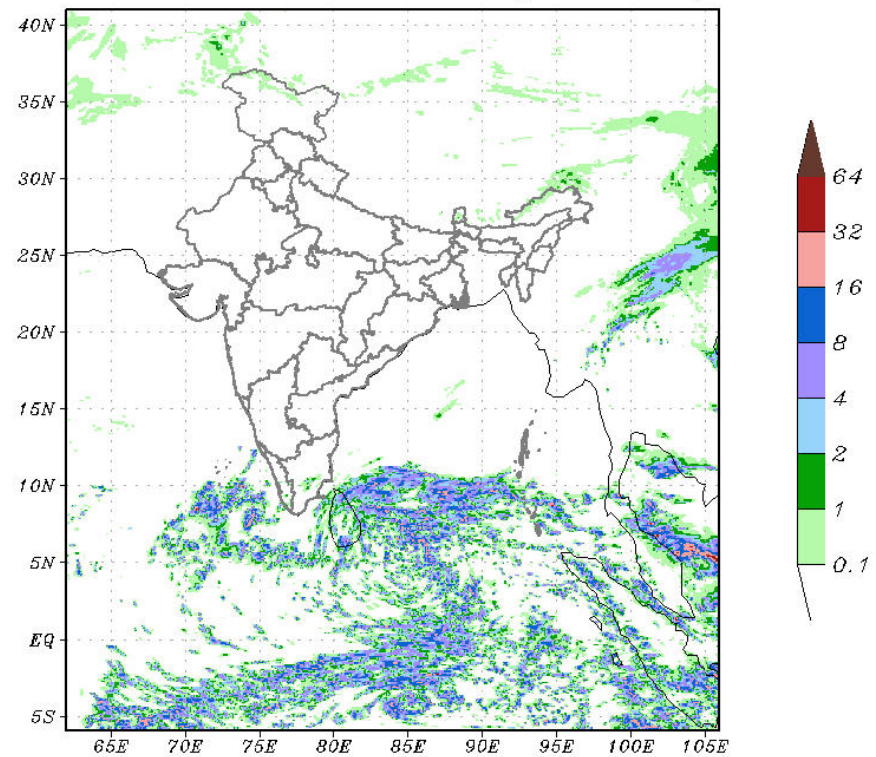
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

DAY 1 FORECAST VALID ON 00Z7DEC2018
RAINFALL(cm) CI=0.1,1,2,4,8,...
NCMRWF UNIFIED MODEL (REG-4Km)



DAY 2 FORECAST VALID ON 00Z8DEC2018
RAINFALL(cm) CI=0.1,1,2,4,8,...
NCMRWF UNIFIED MODEL (REG-4Km)



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.

