

Experimental Climate Monitoring and Prediction

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Highlights

- The IRI weekly rainfall forecast predicts total rainfall up to 300 mm in Mullaitivu and Trincomalee districts during 12 - 17 Dec.
- Between 4 - 10 Dec: up to 120 mm of rainfall was recorded in Galle district on the 4th.
- From 2 - 8 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 3 - 9 Dec: up to 36 km/h, northeasterly winds were experienced by the entire island.
- 0.5 °C above average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On December 4th, Galle district received up to 120 mm of rainfall; Trincomalee district up to 90 mm; Batticaloa district up to 50 mm; Anuradhapura, Polonnaruwa, Matale, Ratnapura and Ampara districts up to 30 mm; and Mullaitivu, Kurunegala, Gampaha, Colombo, Kalutara, Kegalle, Kandy, Nuwara Eliya, Badulla and Monaragala districts up to 20 mm. On the 5th, Batticaloa district received up to 60 mm of rainfall; Ampara and Colombo districts up to 50 mm; Trincomalee, Polonnaruwa, Badulla and Monaragala districts up to 30 mm; and Matale, Nuwara Eliya, Kandy, Kalutara, Galle and Hambantota districts up to 20 mm. On the 6th, Batticaloa district received up to 60 mm of rainfall; Trincomalee, Ampara and Anuradhapura districts up to 30 mm; and Kilinochchi, Mullaitivu and Polonnaruwa districts up to 20 mm. On the 7th, several regions of Polonnaruwa district received up to 50 mm rainfall; Trincomalee, Batticaloa and Ampara districts up to 30 mm; Matale, Kandy and Badulla districts up to 20 mm. On the 8th, Badulla and Monaragala districts received up to 20 mm of rainfall. No significant rainfalls were recorded in any part of the island on the 9th. On the 10th, Batticaloa district received up to 15 mm of rainfall.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall up to 100-150 mm in Batticaloa, Ampara and Monaragala districts; up to 75-100 mm in Trincomalee, Anuradhapura, Polonnaruwa, Badulla and Hambantota districts; and up to 50-75 mm in Matale, Kandy, Nuwara Eliya, Colombo, Galle and Matara districts. Above average rainfall up to 100-200 mm is shown for Batticaloa and Ampara districts; up to 50-100 mm in Trincomalee, Polonnaruwa, Monaragala, Galle and Hambantota districts; and up to 25-50 mm in Badulla and Matale districts. Below average rainfall up to 25-50 mm is shown Kilinochchi, Mannar, Vavuniya, Anuradhapura and Kurunegala districts; and up to 10-25 mm Jaffna, Mullaitivu, Puttalam, Gampaha and Kegalle districts.

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 seas around Sri Lanka.

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 11th - 17th Dec: Total rainfall up to 55 mm in Trincomalee, Batticaloa and Ampara districts; up to 35-45 mm in Jaffna, Mullaitivu and Kilinochchi districts; and up to 25-35 mm in Mannar, Vavuniya, Anuradhapura, Matale, Kandy, Kurunegala, Kegalle, Badulla and Monaragala districts.

From 18th - 24th Dec: Total rainfall up to 115 mm in Batticaloa and Ampara districts; up to 85-95 mm in Jaffna, Trincomalee, Polonnaruwa, Badulla and Monaragala districts; 75-85 mm in Anuradhapura, Matale, Kandy, Kegalle, Kurunegala and Nuwara Eliya districts; and up to 65-75 mm in Kilinochchi, Mullaitivu, Vavuniya, Mannar, Puttalam, Gampaha, Colombo and Ratnapura districts.

IMD NCMWRF Forecast:

14th Dec: Up to 40 mm of rainfall in Jaffna and Vavuniya districts; and up to 20 mm in Kilinochchi, Trincomalee, Polonnaruwa and Ampara districts.

15th Dec: Up to 160 mm in Puttalam, Kurunegala, Ratnapura, Batticaloa, Ampara, Monaragala, Matara and Hambantota districts; up to 80 mm in Trincomalee, Anuradhapura, Polonnaruwa, Badulla and Kurunegala districts; up to 40 mm in Mullaitivu, Vavuniya, Matale and Kegalle districts; up to 20 mm in Kandy and Nuwara Eliya districts; and up to 10 mm in most parts of the island.

IRI Model Forecast:

From 12 – 17 Dec: Total rainfall up to 300 mm in Mullaitivu and Trincomalee districts; up to 200 mm in Jaffna, Kilinochchi, Vavuniya, Anuradhapura and Batticaloa districts; up to 150 mm in Mannar, Polonnaruwa and Ampara districts; and up to 75 mm in Matale, Kandy, Kurunegala and Puttalam districts.

MJO based OLR predictions

For the next 15 days:

MJO shall enhance the rainfall in Sri Lanka in next 5 days and shall not have an impact 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.

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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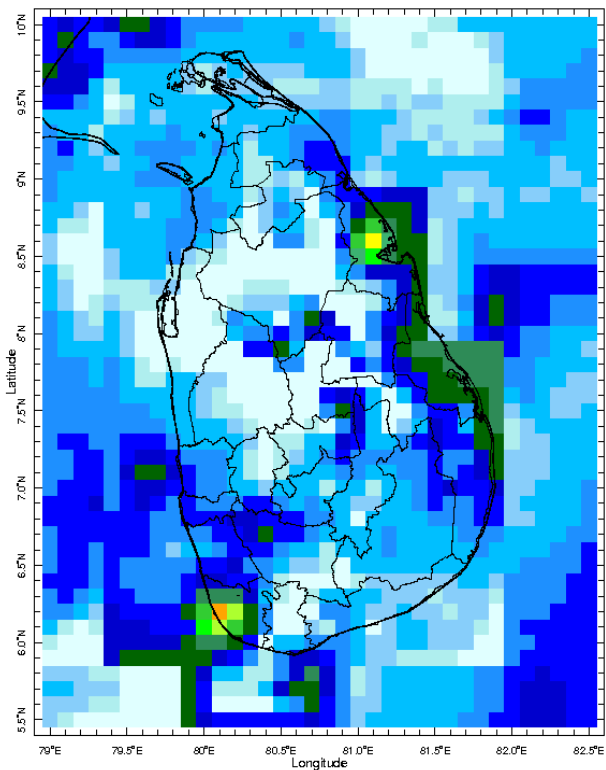
- a. Daily Rainfall Monitoring
- b. Monthly Rainfall Monitoring
- c. Dekadal (10 Day) Satellite Derived Rainfall Estimates
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2. Predictions

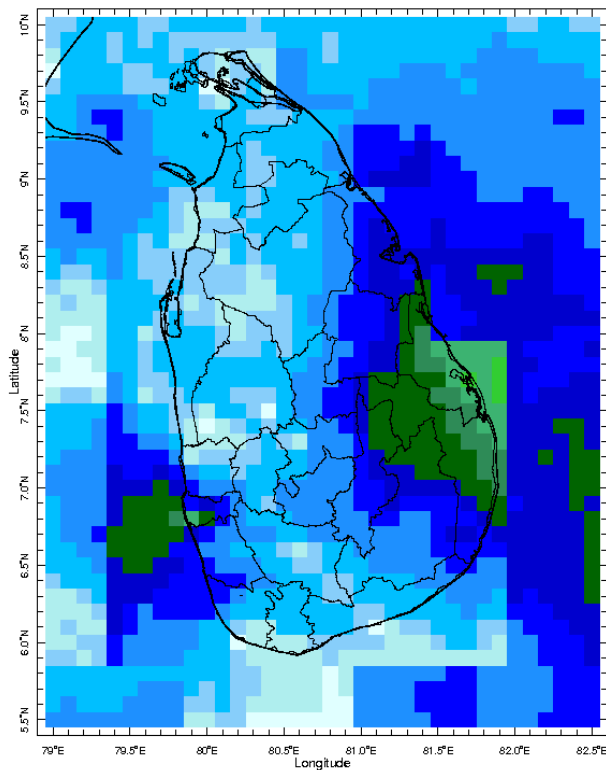
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

Daily Rainfall Monitoring

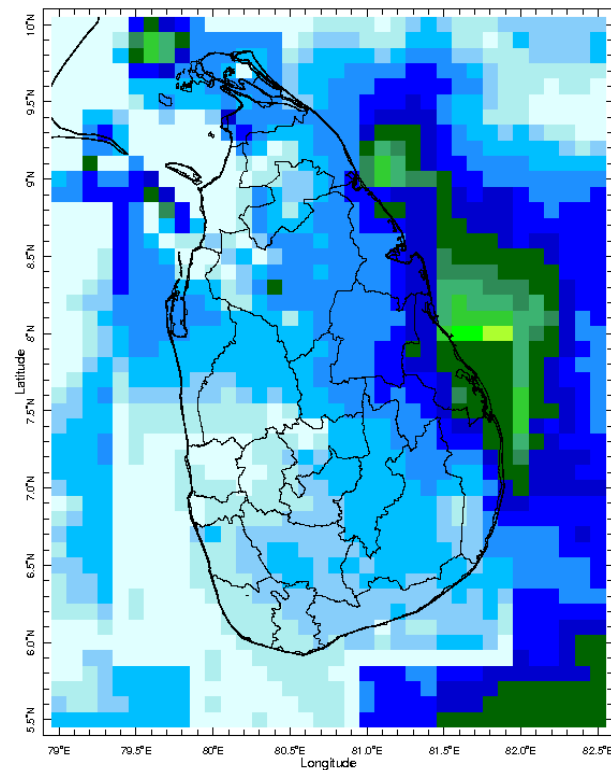
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



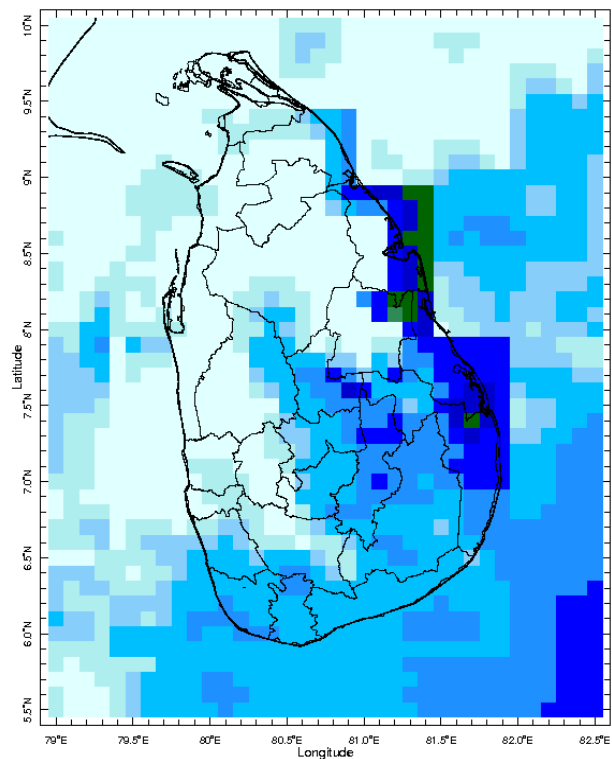
4 Dec 2018



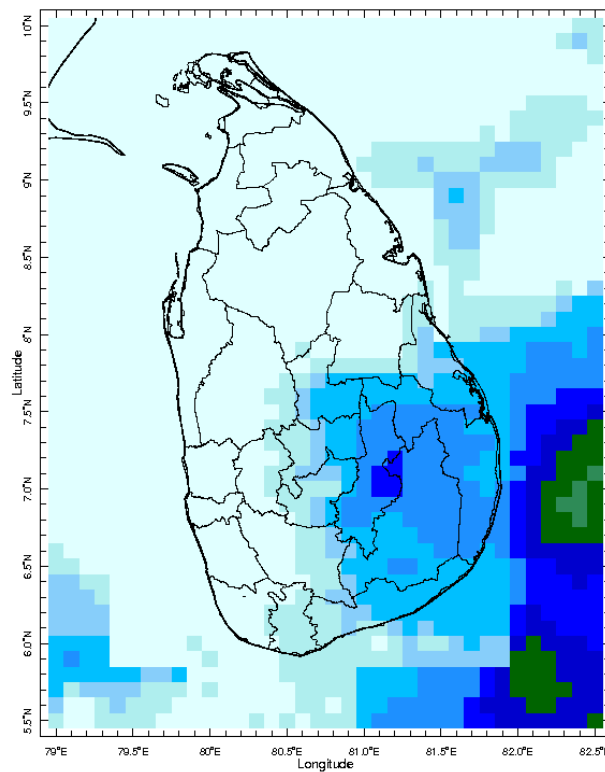
5 Dec 2018



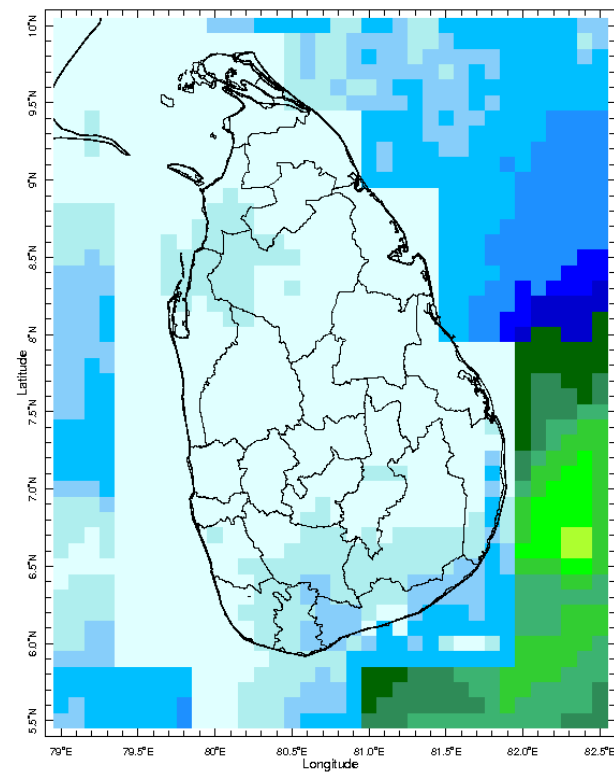
6 Dec 2018



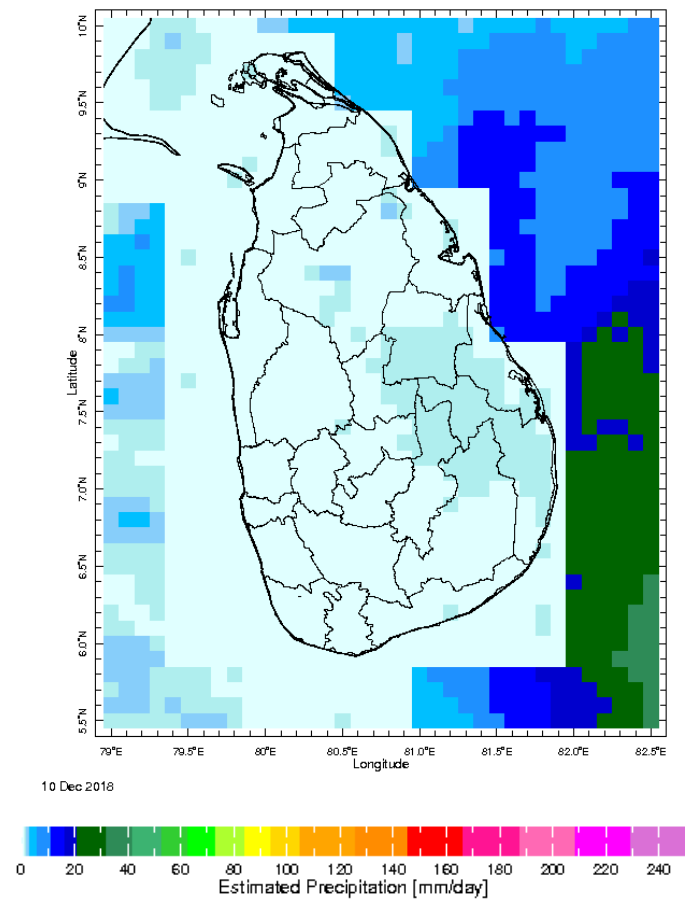
7 Dec 2018



8 Dec 2018

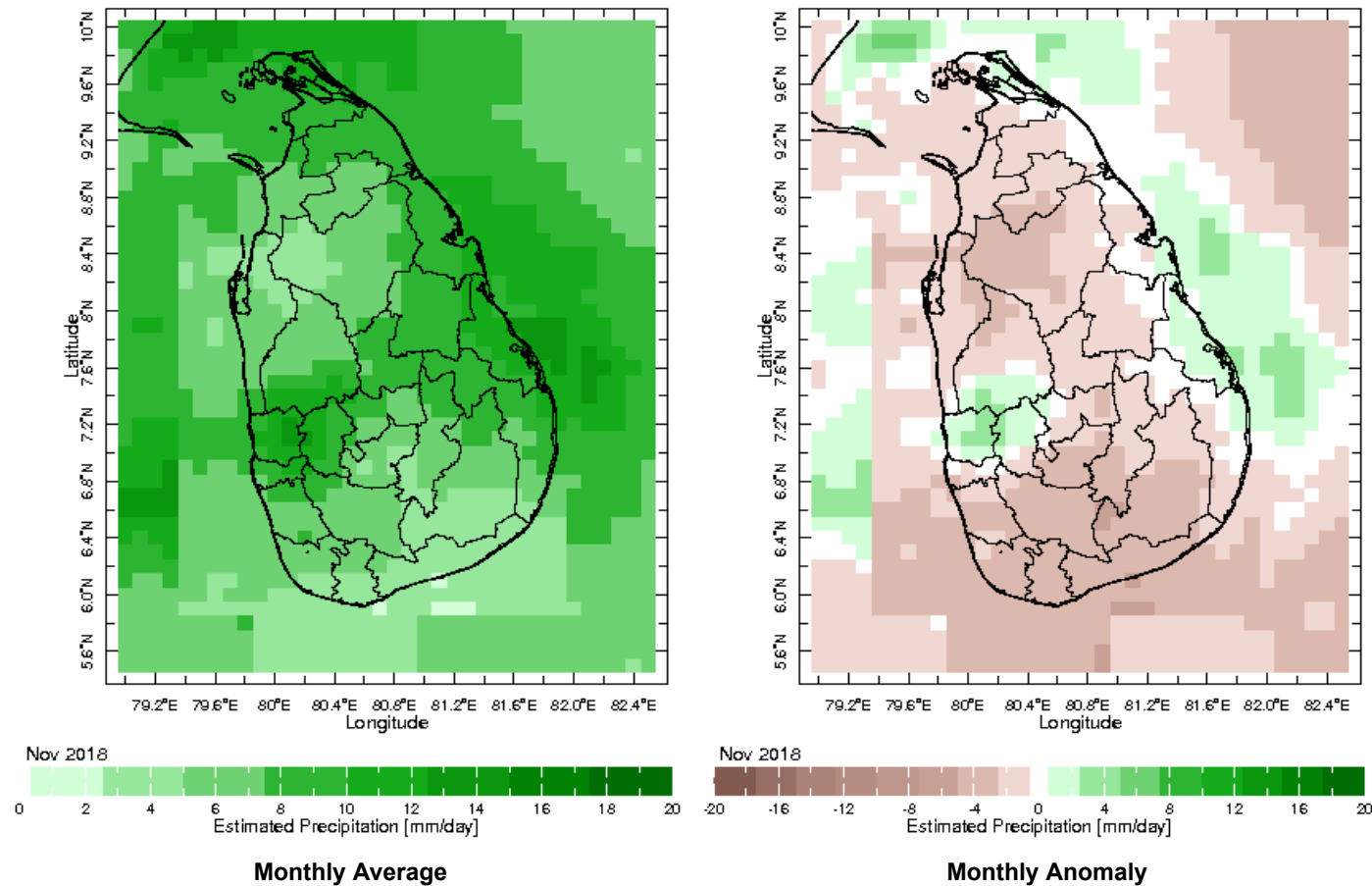


9 Dec 2018

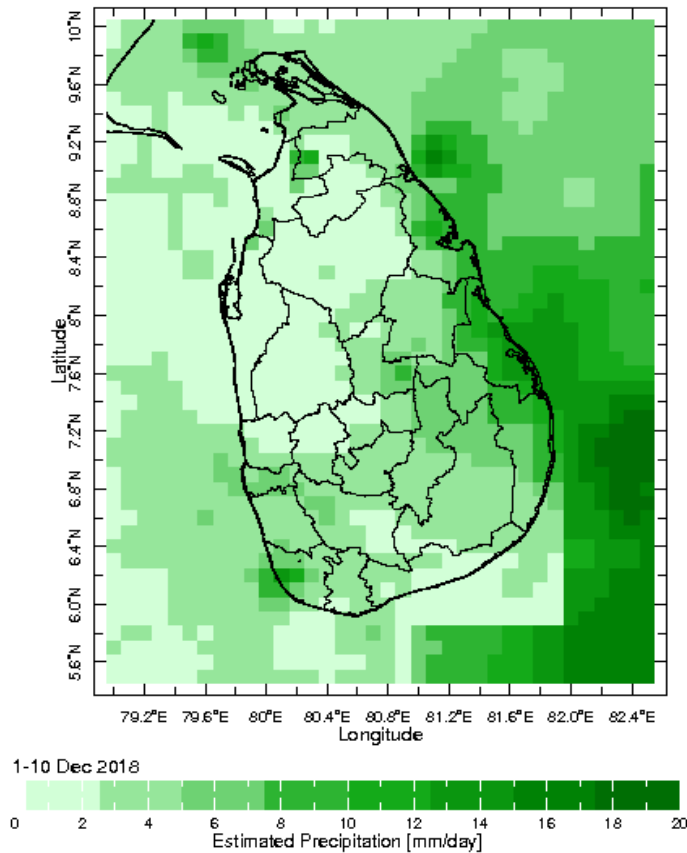
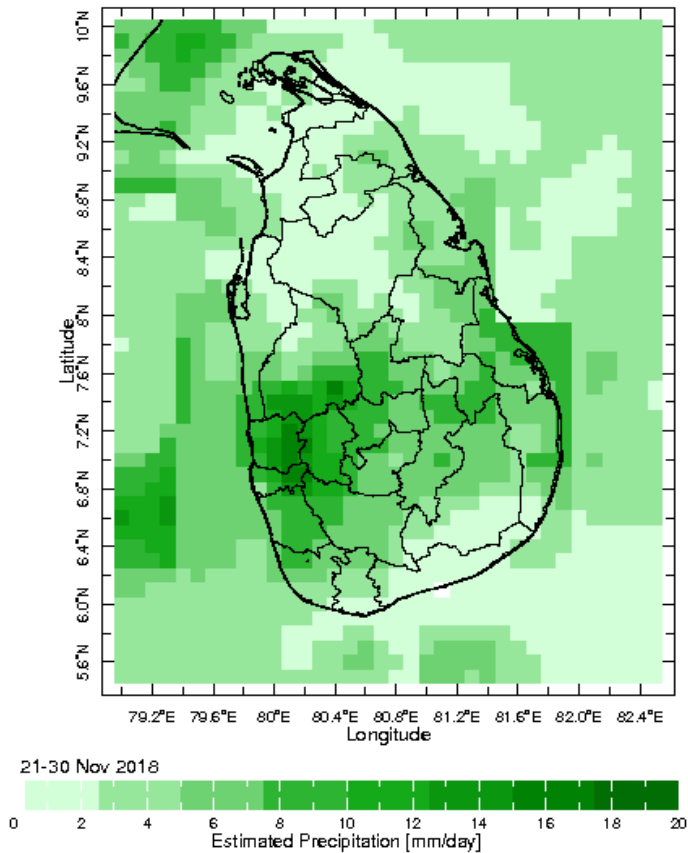


Monthly Rainfall Monitoring

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

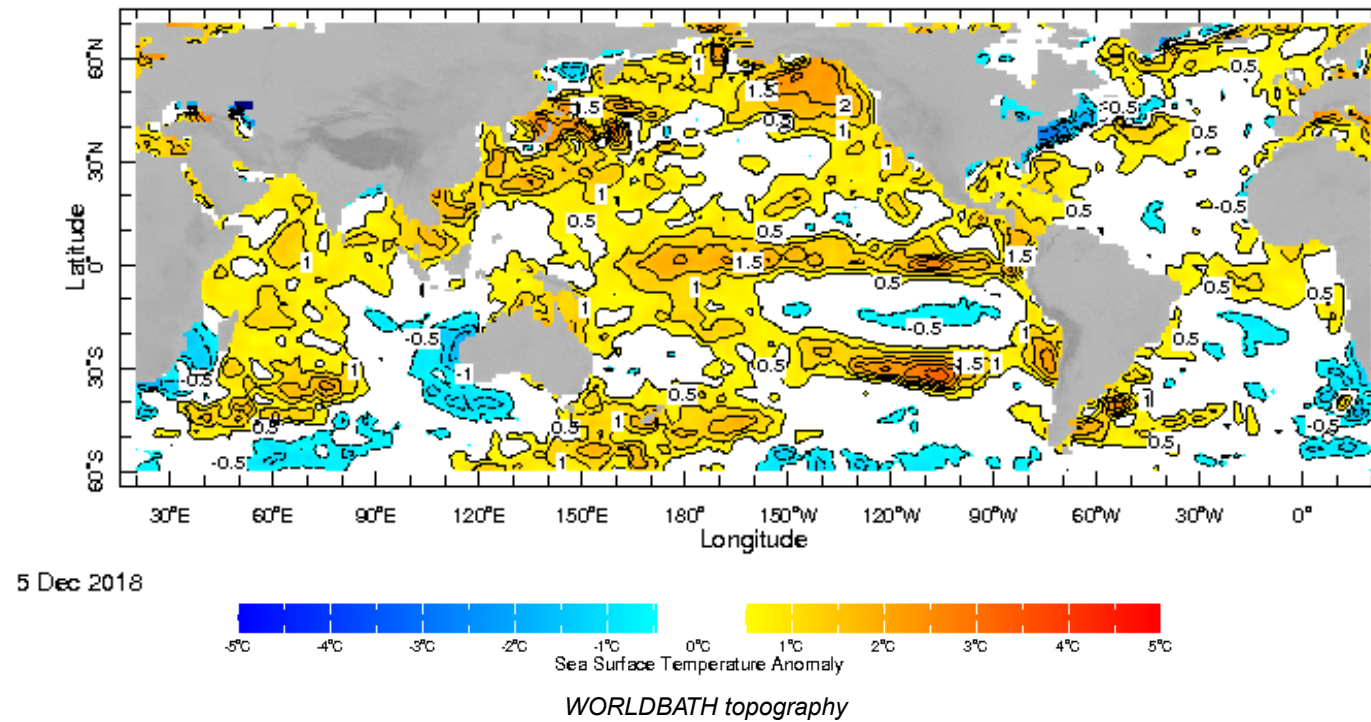


Dekadal (10 Day) Satellite Derived Rainfall Estimates

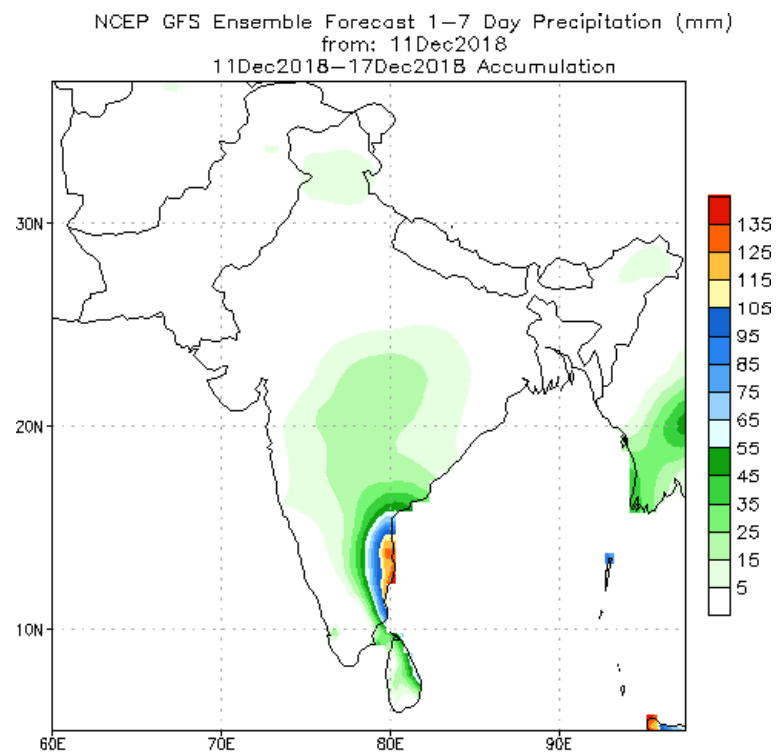


Weekly Average SST Anomalies

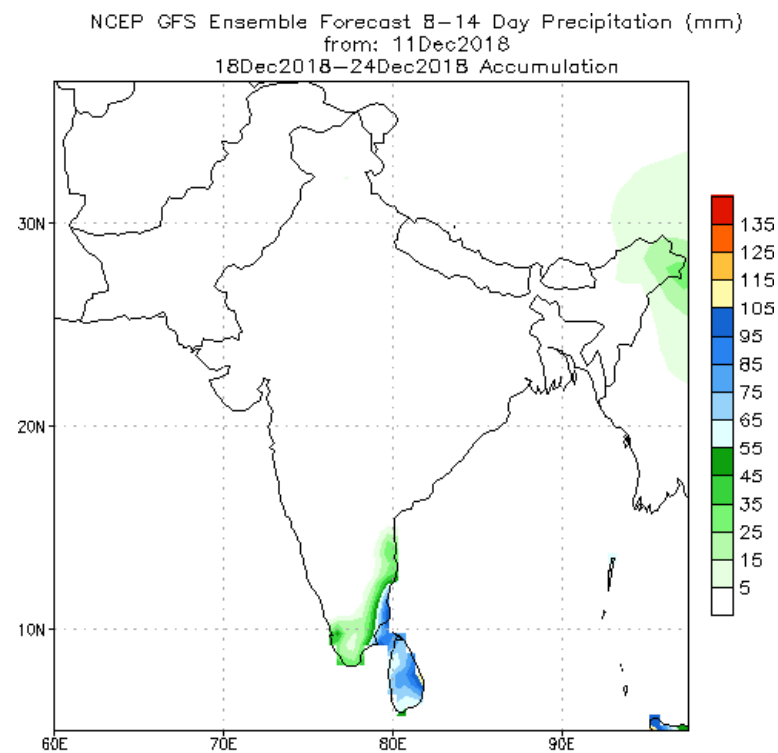
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



NCEP GFS 1- 14 Day prediction

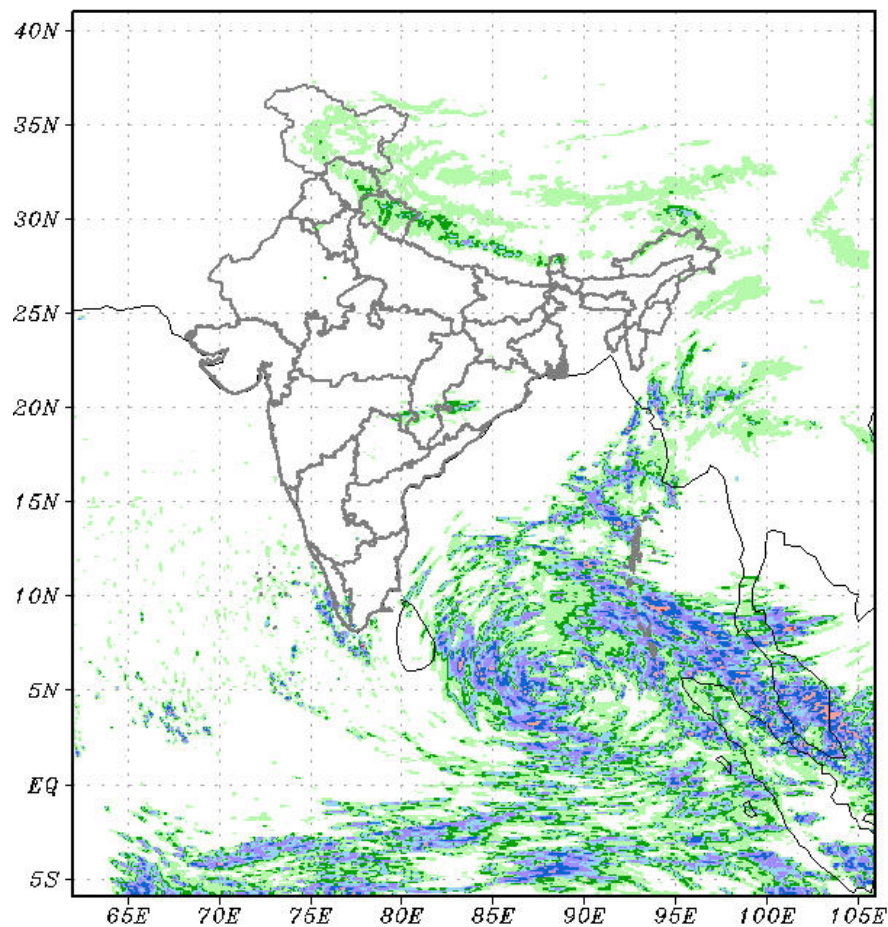


Bias correction based on last 30-day forecast error

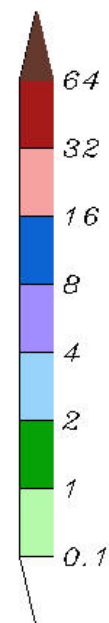
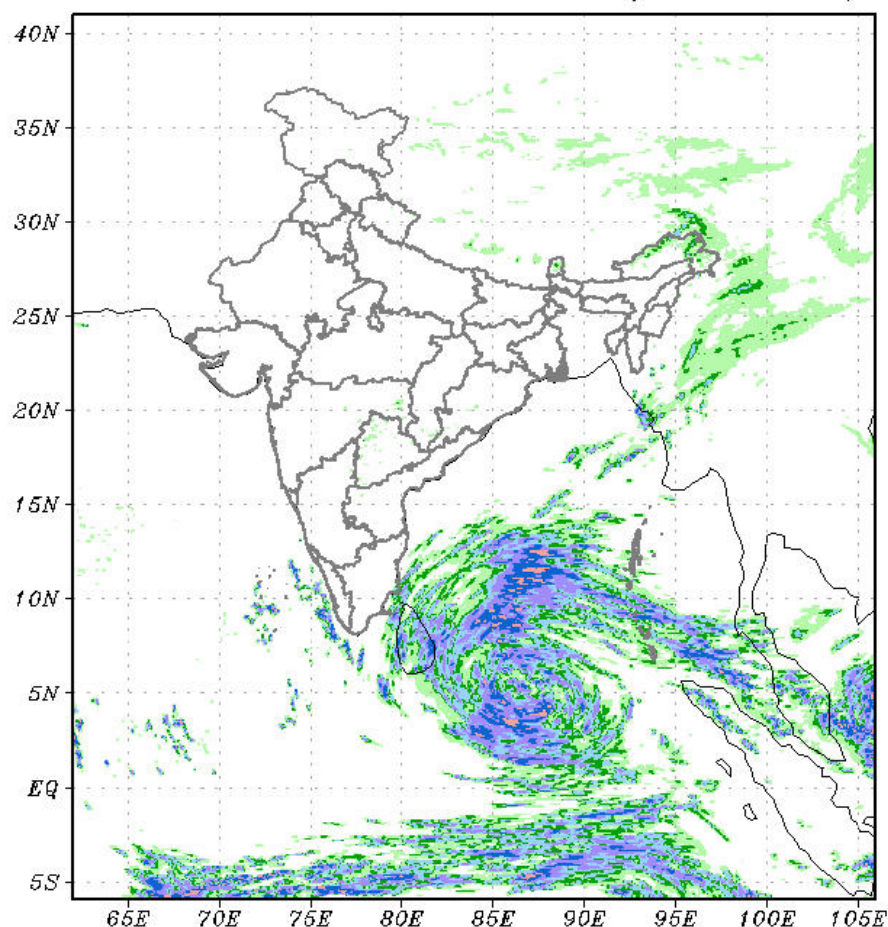


Bias correction based on last 30-day forecast error

DAY 1 FORECAST VALID ON 00Z14DEC2018
RAINFALL(cm) CI=0.1,1,2,4,8,...
NCMRWF UNIFIED MODEL (REG-4Km)



DAY 2 FORECAST VALID ON 00Z15DEC2018
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.

