

Experimental Climate Monitoring and Prediction

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25 October 2018

Highlights

- The IRI weekly rainfall forecast predicts total rainfall up to 200 mm in Kandy, Badulla and Nuwara Eliya districts during 24 - 29 Oct.
- Between 17 - 22 Oct: up to 90 mm of rainfall was recorded in Colombo district on the 22nd.
- From 14 - 20 Oct: entire island recorded a minimum temperature between 20-25 °C and a maximum temperature between 30-35 °C.
- From 16 - 22 Oct: up to 11 km/h, northwesterly 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 October 17th, Anuradhapura and Kurunegala districts received up to 30 mm of rainfall; and Jaffna, Kilinochchi, Mullaitivu, Mannar, Vavuniya, Puttalam, Trincomalee, Kegalle, Kandy and Nuwara Eliya districts up to 20 mm. On the 18th, Jaffna district received up to 30 mm of rainfall; and Kilinochchi district up to 20 mm. On the 19th, Kegalle district received up to 50 mm rainfall; Kurunegala, Gampaha, Ratnapura, Kandy, Nuwara Eliya, Badulla and Monaragala districts up to 30 mm; and Puttalam, Matale, Colombo and Kalutara districts up to 20 mm. On the 20th, Puttalam, Kurunegala, Matale, Kandy and Badulla districts received up to 20 mm of rainfall; and most parts of the island up to 10 mm. On the 21st, Kurunegala, Matale, Polonnaruwa, Ampara, Kandy, Nuwara Eliya, Kegalle, Badulla and Monaragala districts received up to 20 mm of rainfall; and most parts of the island up to 10 mm. On the 22nd, Colombo district received up to 90 mm of rainfall; Kalutara and Galle districts up to 80 mm; Puttalam, Kurunegala, Vavuniya, Kandy, Badulla, Kegalle, Ratnapura, Nuwara Eliya and Monaragala districts; up to 30 mm in Anuradhapura, Ampara and Matara districts; and rest of the island up to 20 mm.

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

Monthly Monitoring: During September - above average rainfall conditions up to 210 mm were experienced by Ratnapura, Monaragala, Badulla, Kandy, Anuradhapura districts and north eastern regions of Kurunegala district; and up to 60 mm in Mannar, Vavuniya, Puttalam, Matale, Polonnaruwa, Kalutara, Galle and several regions of Matara and Ampara districts. Mullaitivu, Trincomalee, Batticaloa, Gampaha, Colombo and south western regions of Kurunegala district experienced below average rainfall up to 90 mm. The CPC Unified Precipitation Analysis tool shows up to 300 mm of total rainfall in Ratnapura, Kalutara and Galle districts; and up to 200 mm in Anuradhapura, Kurunegala, Kandy, Nuwara Eliya, Kegalle, Colombo, Matara, Badulla and Monaragala districts.

Ocean State (Text Courtesy IRI)

Pacific sea state: October 19, 2018

While ENSO-neutral conditions prevailed in September, signs of El Niño increased in early October 2018 as east-central tropical Pacific SSTs warmed to weak El Niño levels. Also, low level winds showed westerly anomalies in most of the last three weeks. The subsurface water temperature continued to be above-average, and increased further recently. The official CPC/IRI outlook calls for a 70-75% chance of El Niño development during October/November, continuing through winter 2018-19. An El Niño watch is in effect. New forecasts of statistical and dynamical models collectively favor imminent El Niño development, most likely weak to moderate strength, continuing through winter.

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 24th – 30th Oct: Total rainfall up to 115 mm in Mullaitivu, Vavuniya, Anuradhapura, Mannar and Kurunegala districts; up to 95-105 mm in Puttalam, Matale, Polonnaruwa and Trincomalee districts; up to 85-95 mm in Jaffna, Kilinochchi, Gampaha, Colombo, and Kegalle districts; and up to 75-85 mm in Galle, Ratnapura, Nuwara Eliya and Kandy districts.

From 31st Oct – 6th Nov: Total rainfall up to 125 mm in Anuradhapura and Kurunegala districts; up to 105-115 mm in Mannar, Puttalam, Kurunegala, Anuradhapura, Matale, Gampaha, Colombo, Kalutara Kegalle, Ratnapura and Galle districts; up to 95-105 mm in Vavuniya, Polonnaruwa and Trincomalee; and up to 75-85 mm in Jaffna, Batticaloa, Badulla, Matar and Monaragala districts.

IMD NCMWRF Forecast:

26th Oct: Up to 160 mm of rainfall in Kegalle, Ratnapura, Galle, Matara, Nuwara Eliya and Badulla districts; and up to 80 mm in Vavuniya, Ampara and Hambantota districts; and up to 40 mm in Puttalam, Kurunegala, Gampaha, Colombo and Monaragala districts.

27th Oct: Up to 160 mm in Ratnapura, Matara and Hambantota districts; and up to 40 mm in Batticaloa, Ampara and Galle districts.

IRI Model Forecast:

From 24 – 29 Oct: Total rainfall up to 200 mm in Kandy, Badulla and Nuwara Eliya districts; up to 150 mm in Mullaitivu, Trincomalee, Anuradhapura, Polonnaruwa, Batticaloa, Matale, Kurunegala, Kegalle, Gampaha, Colombo, Kalutara, Ratnapura and Monaragala districts; up to 100 mm in Jaffna, Kilinochchi, Vavuniya, Puttalam, Galle, Matara and Hambantota districts; and up to 75 mm in rest of the island.

MJO based OLR predictions

For the next 15 days:

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

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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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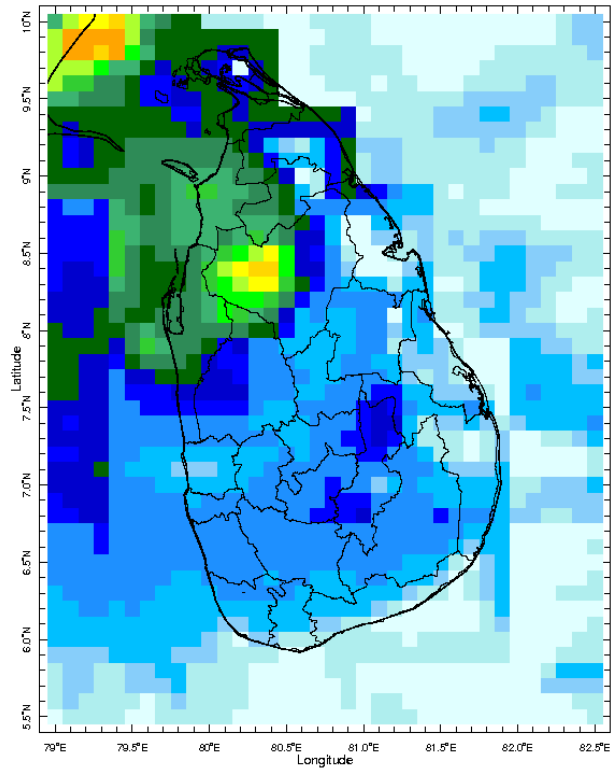
- a. Daily Rainfall Monitoring
- b. Monthly Rainfall Monitoring
- c. Dekadal (10 Day) Satellite Derived Rainfall Estimates
- d. Weekly Average SST Anomalies

2. Predictions

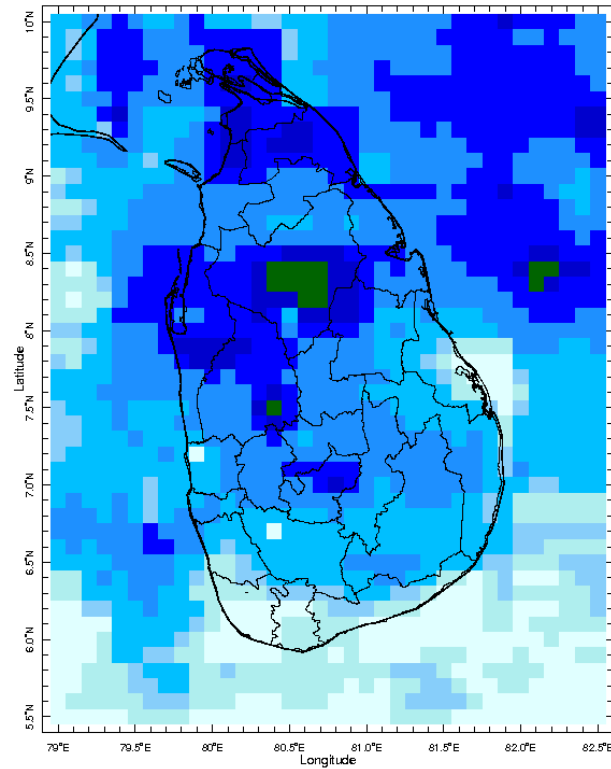
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

Daily Rainfall Monitoring

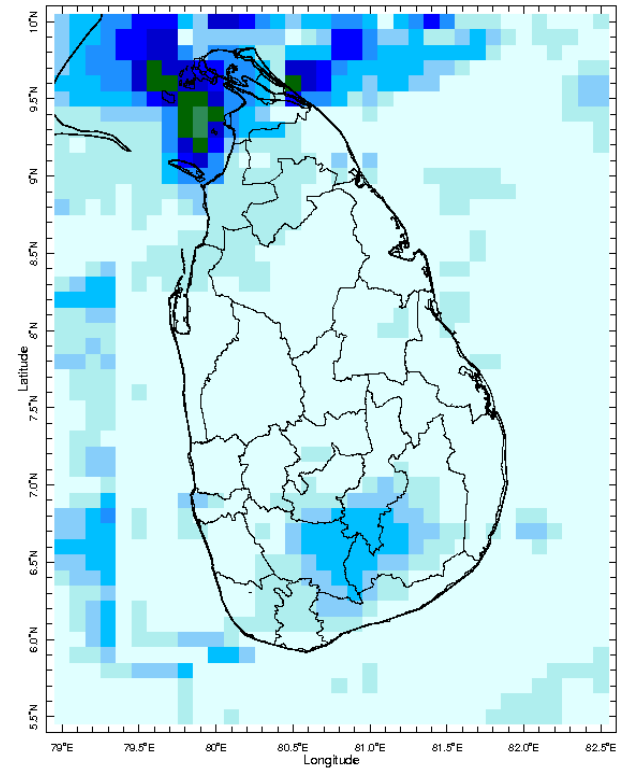
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



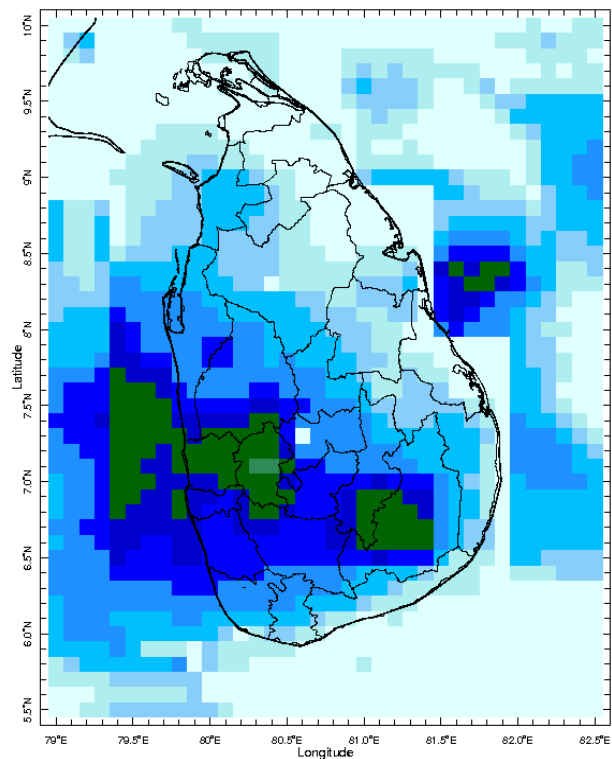
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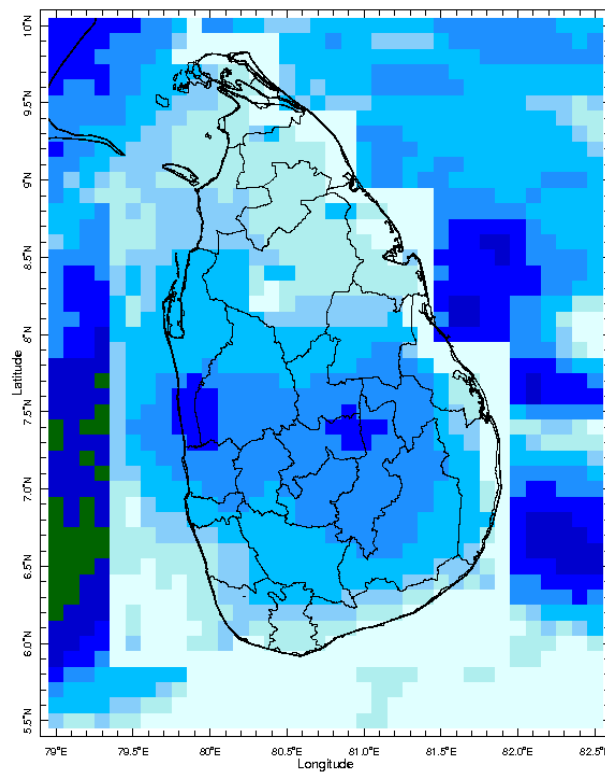
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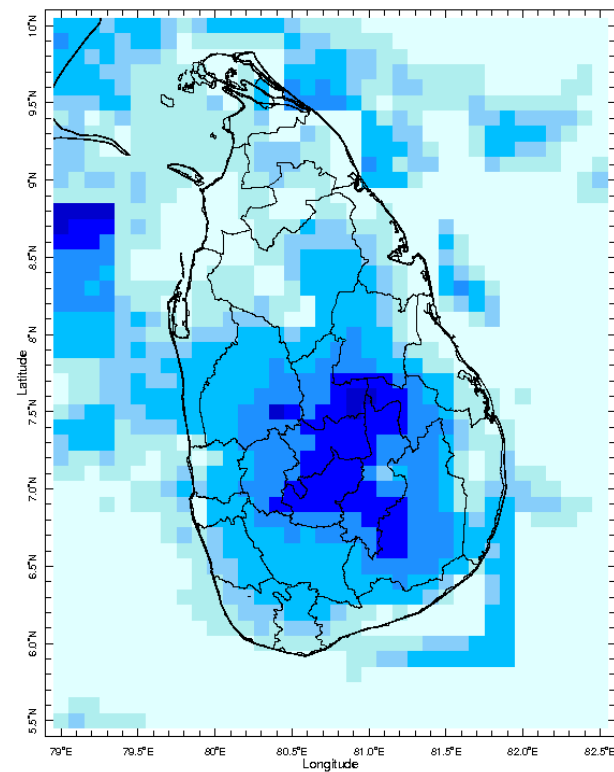
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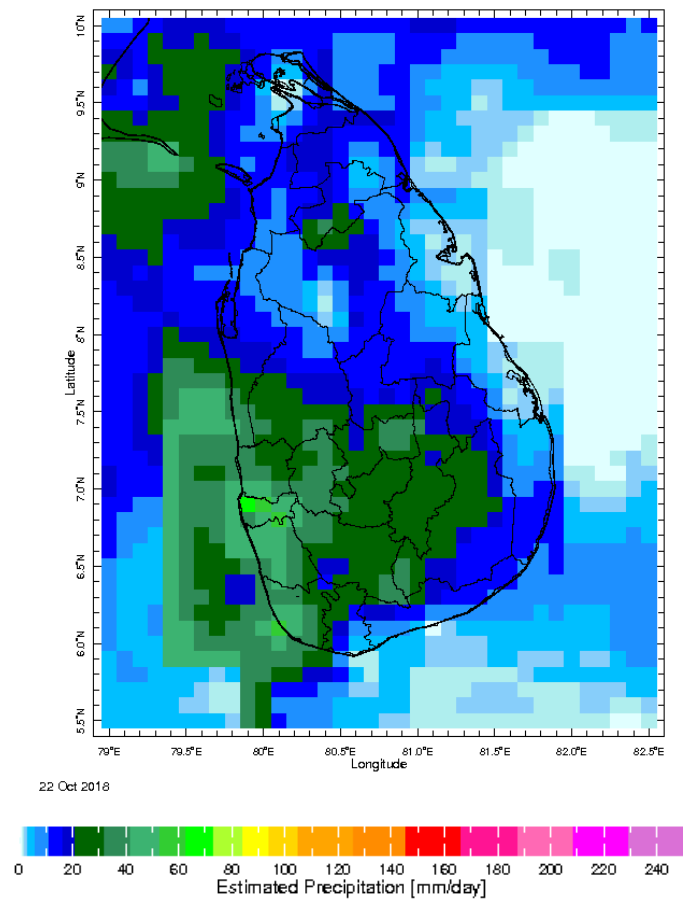
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20 Oct 2018

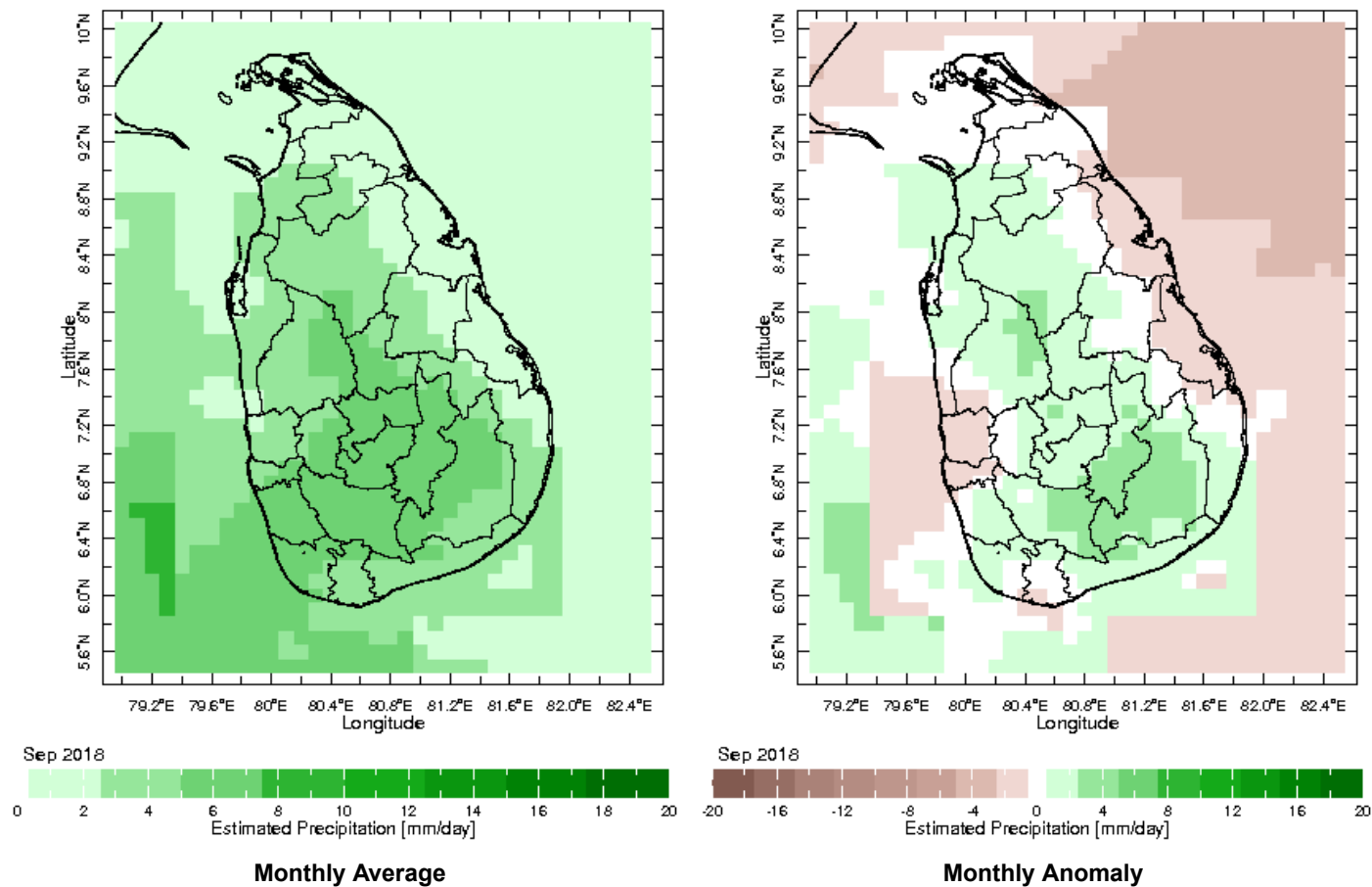


21 Oct 2018

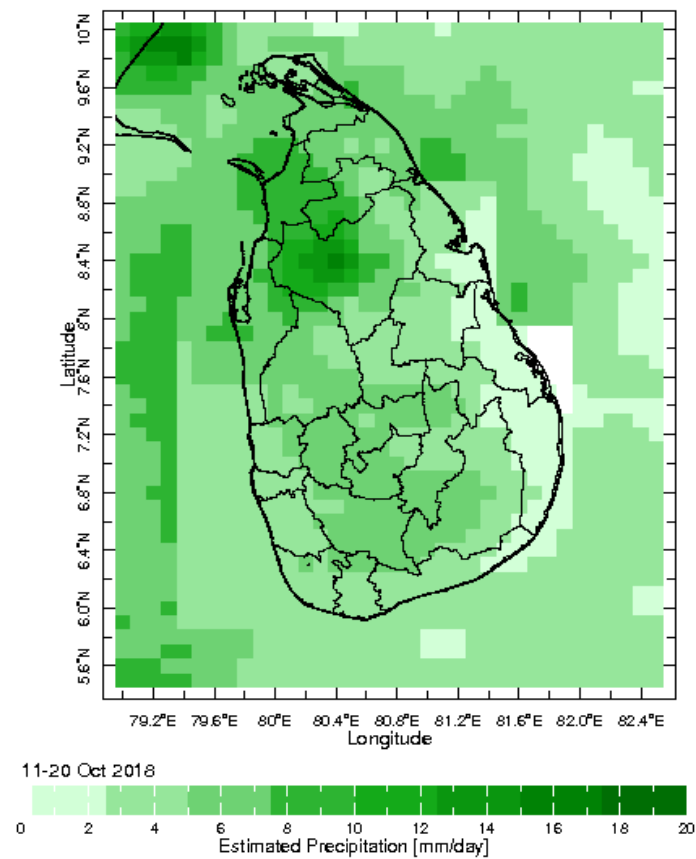
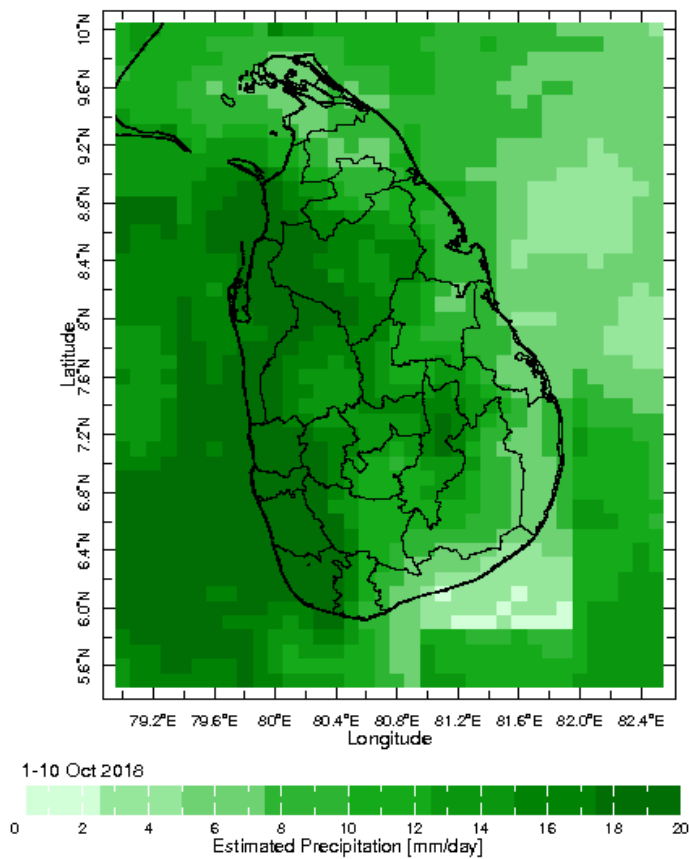


Monthly Rainfall Monitoring

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

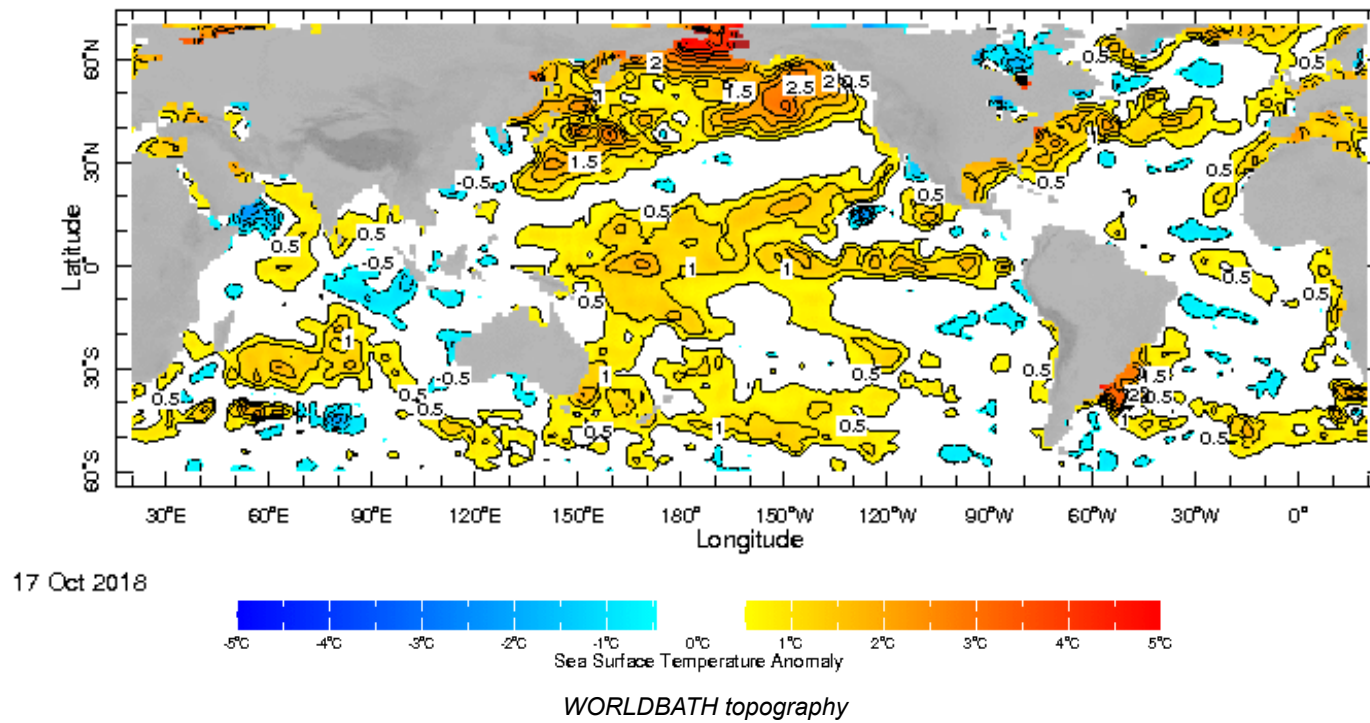


Dekadal (10 Day) Satellite Derived Rainfall Estimates



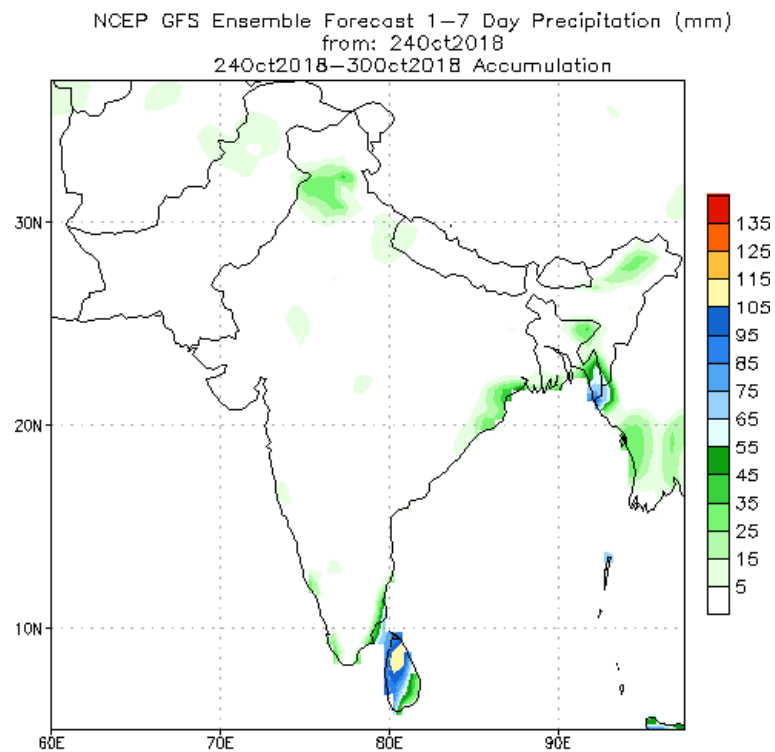
Weekly Average SST Anomalies

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

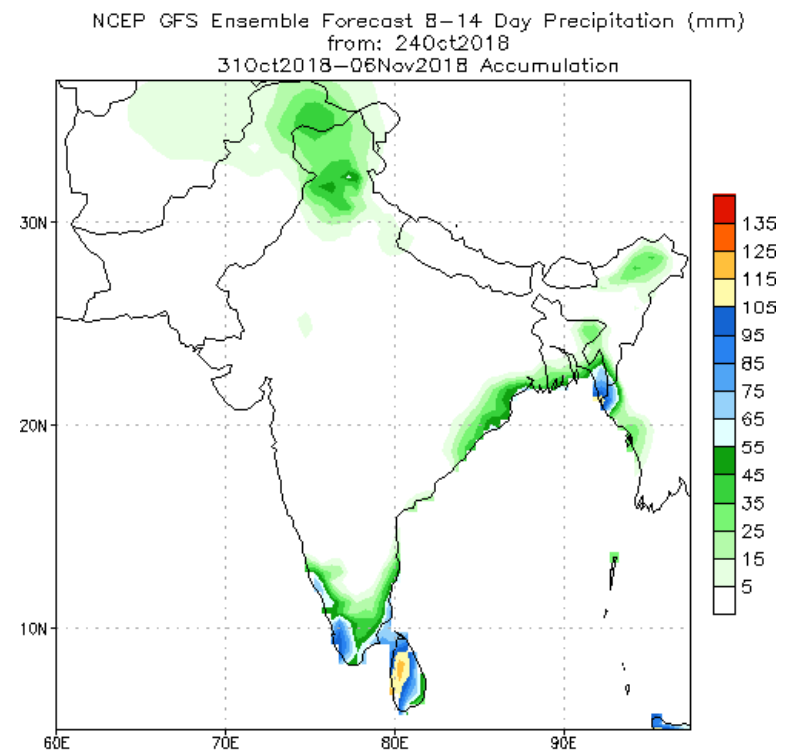


PREDICTIONS

NCEP GFS 1- 14 Day prediction



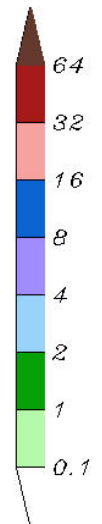
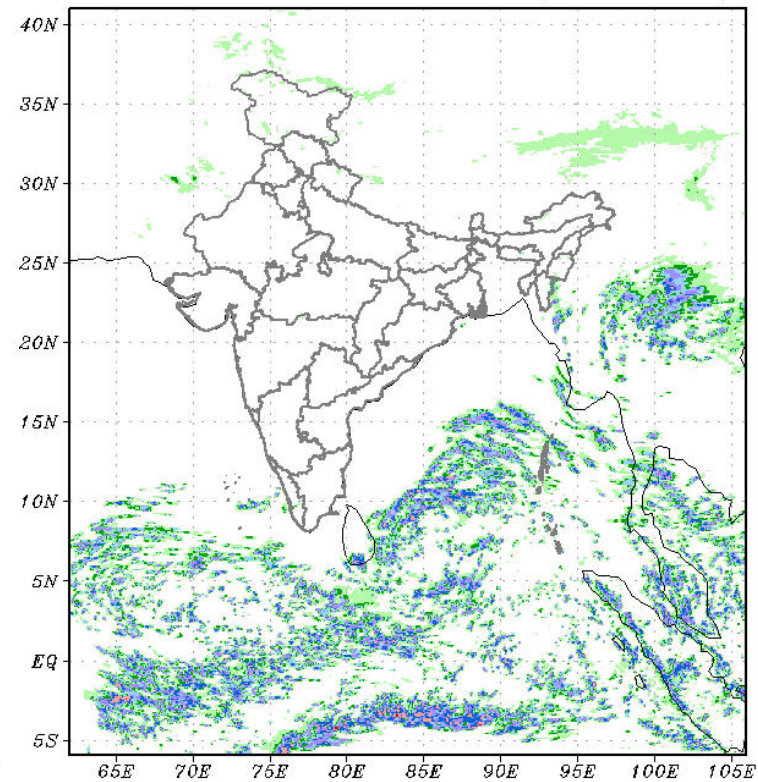
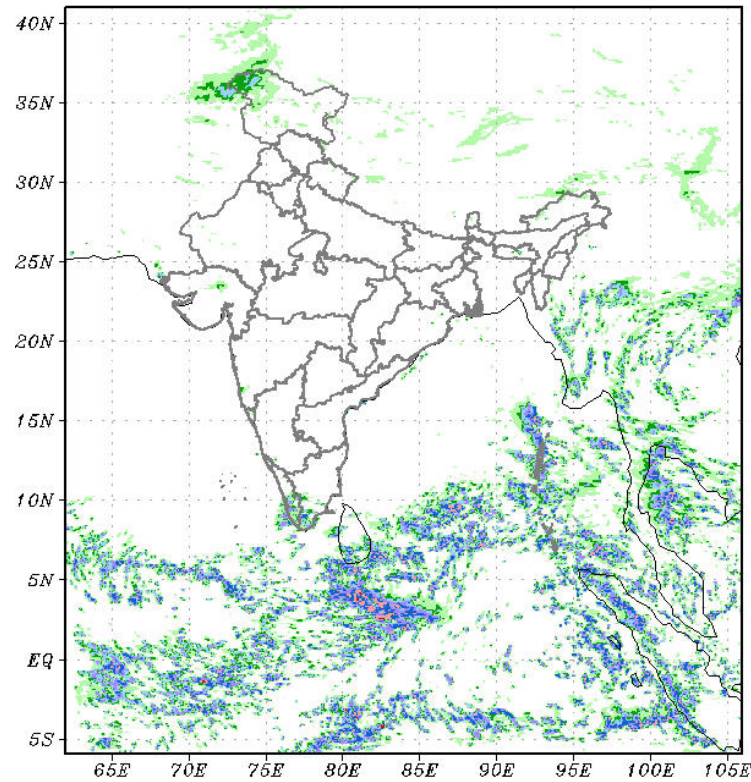
Bias correction based on last 30-day forecast error



Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

DAY 1 FORECAST VALID ON 00Z26OCT2018 DAY 2 FORECAST VALID ON 00Z27OCT2018
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.

