

Experimental Climate Monitoring and Prediction

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15 October 2015

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October 8, 2015 PACIFIC SEAS STATE

During late September through early October 2015 the tropical Pacific SST was at a strong El Niño level. All atmospheric variables support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific. The consensus of ENSO prediction models indicate continuation of strong El Niño conditions during the September–November 2015 season in progress. Some further strengthening into later fall is possible, with the event lasting well into spring 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Neutral sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO is weak and therefore significant impact on rainfall is not expected.

Highlights

Up to 40 mm rainfall was observed in northern, north eastern, western and south western regions of the country during the time period 7th – 13th October. Nuwara Eliya received heavy rainfall up to 70 mm on 11th October and rainfall up to 90 mm was observed in Ratnapura and Anuradhapura on 13th October. Very heavy rainfall is expected in the central region of the country in the next week. Every prediction model predict an increase in the rainfall during the next week.

Summary

Monitoring

Weekly Monitoring: During 7th – 13th October, few regions of the country received rainfall. On 7th October, southern region of Badulla received rainfall up to 40 mm. On 8th October rainfall up to 40 mm was observed in the northern region of Badulla and rainfall up to 30 mm was observed in southern regions of Ampara and Ratnapura. Rainfall up to 30 mm was observed in Moneragala on 9th October and rainfall up to 65 mm was observed in the ocean near Puttalam on 10th October while western region of Kurunegala and central region of Moneragala received rainfall up to 30 mm. Rainfall up to 70 mm was observed in Nuwara Eliya on 11th October while southern region of Polonnaruwa and Moneragala received rainfall up to 40 mm. On 12th October, ocean near Puttalam received rainfall up to 65 mm and ocean near Jaffna received rainfall up to 30 mm. On 13th October rainfall up to 90 mm was observed in Ratnapura and Anuradhapura while western region of the country received rainfall up to 80 mm.

Monthly Monitoring: In September 2015 the entire country received above average rainfall while the ocean near northern and eastern provinces received below average rainfall.

Predictions

14 day prediction: NOAA NCEP models predict relatively high rainfall in south western region of the country compared to the rest of the country during 14th - 20th October. Total rainfall up to 85 mm is expected during the week in the south western region and total rainfall up to 55 mm is expected in the rest of the country except the northern region. These models predict that the rainfall shall increase during 21st - 27th October with total rainfall up to 135 mm expected in south western region and total rainfall up to 95 mm expected in southern region and the rest of the country shall receive total rainfall up to 55 mm.

IMD WRF & IRI Model Forecast: According to the IMD WRF model rainfall up to 125 mm is expected in Badulla, southern region of Kurunegala and Polonnaruwa on 16th October while central province shall receive heavy rainfall up to 65 mm and rest of the country also shall receive rainfall. On 17th October rainfall up to 65 mm is expected in Hambantota, Galle, Kalutara and Ratnapura while rainfall up to 35 mm is expected in central and southern regions. IRI CFS models predict very heavy rainfall in the central region of the country towards the eastern slopes of the central mountain, Up to 200 mm rainfall is expected between 14th to 19th October in Central mountains.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for October to December, the total 3 month precipitation shall be climatological. The 3 month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- Seasonal Predictions from IRI

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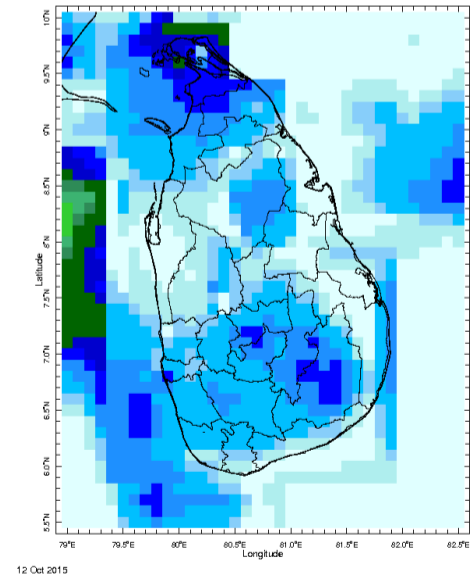
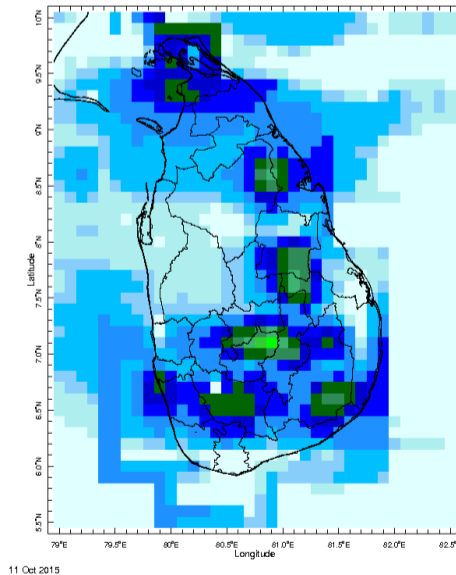
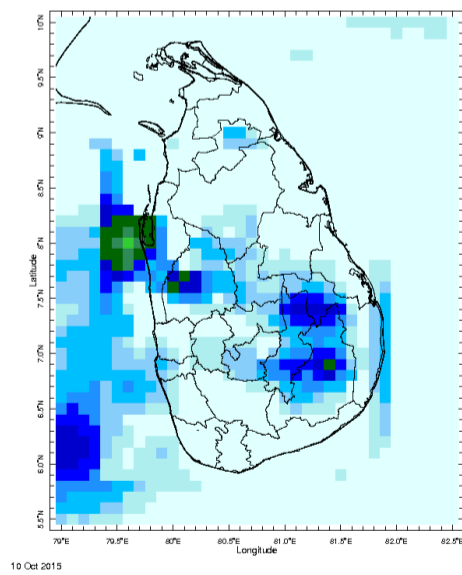
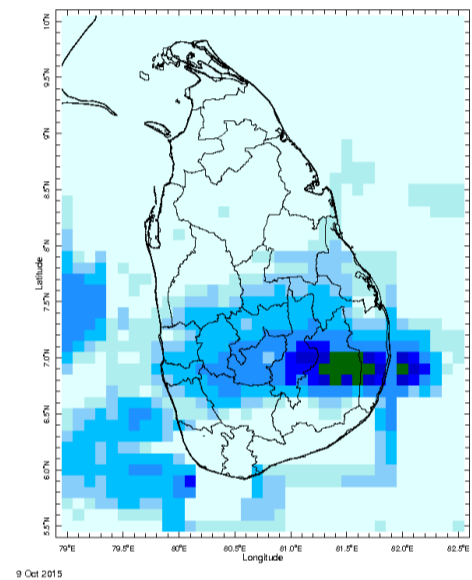
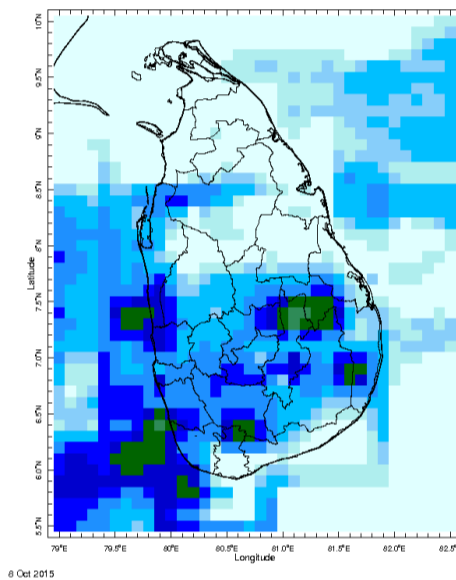
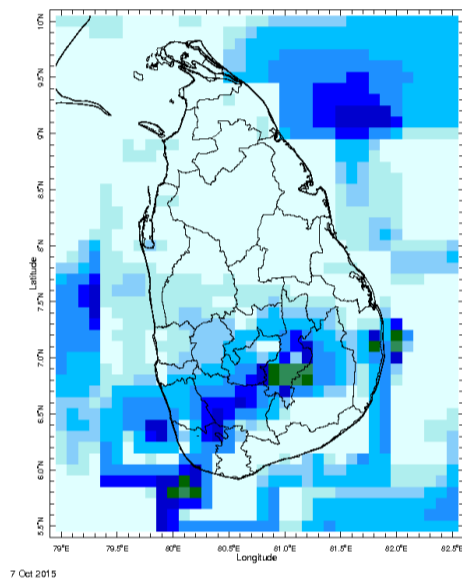
Weekly Hydro- Meteorological Report for Sri Lanka

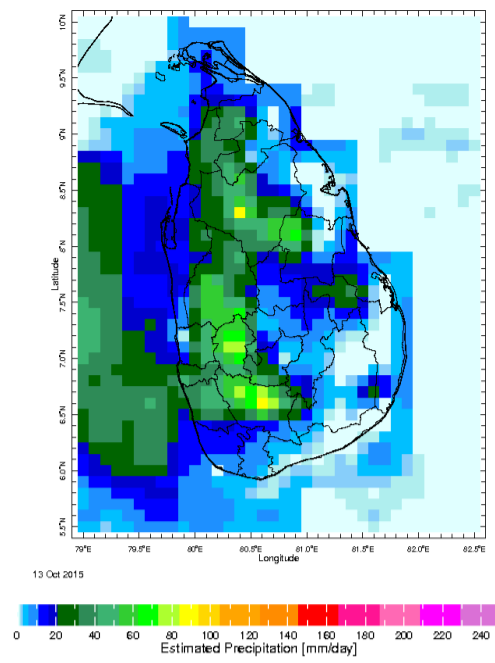
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Daily Rainfall Monitoring

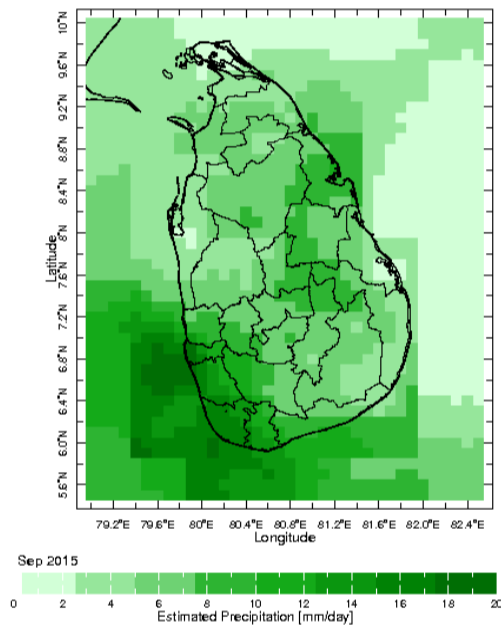
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



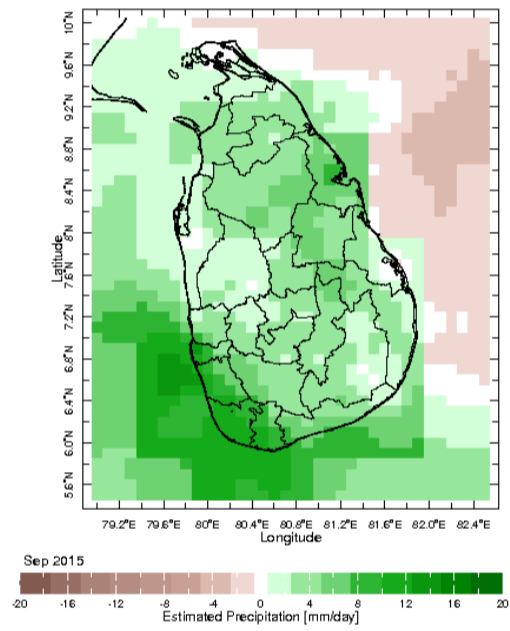


Monthly Rainfall Monitoring

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

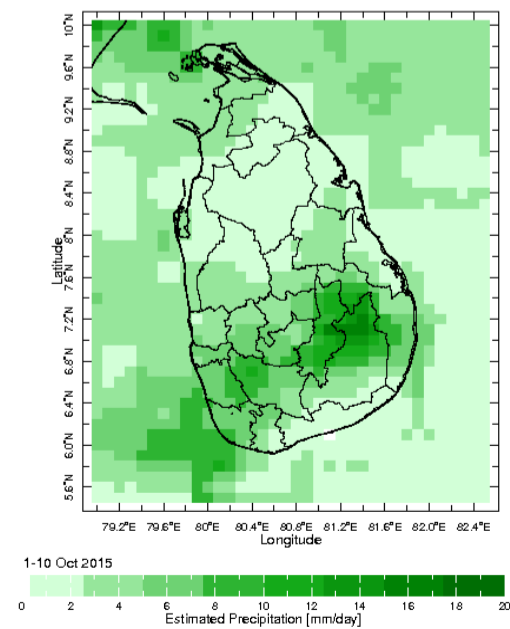
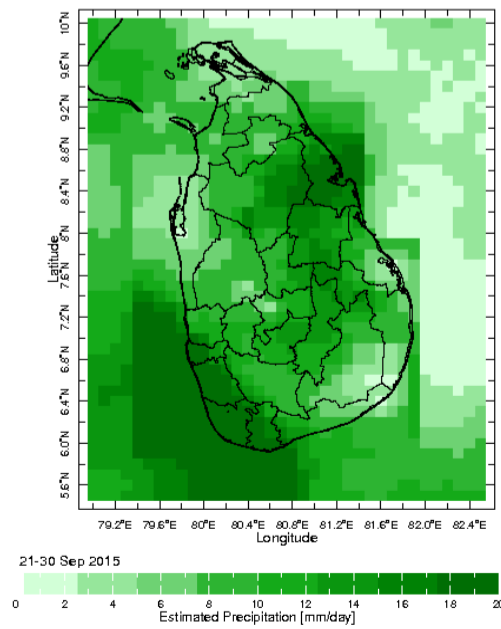


Monthly Average

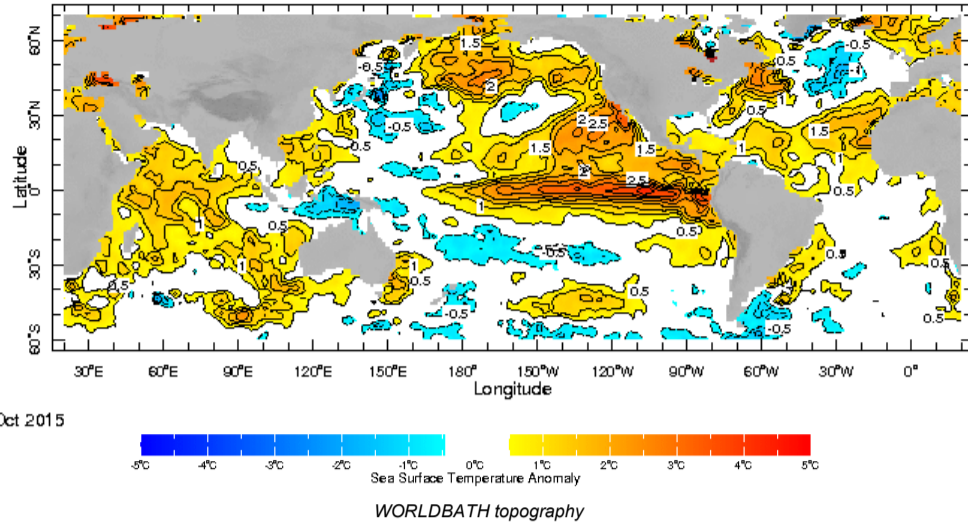


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

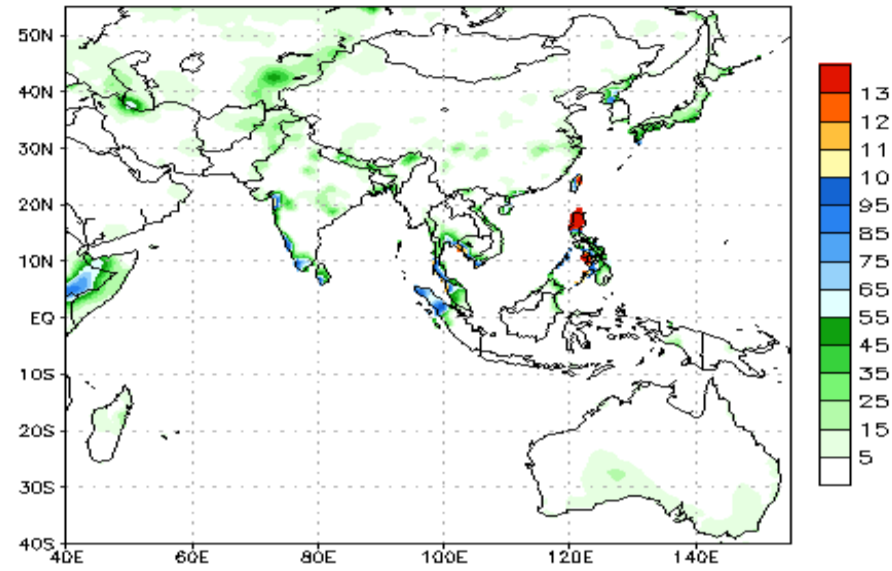


Weekly Average SST Anomalies

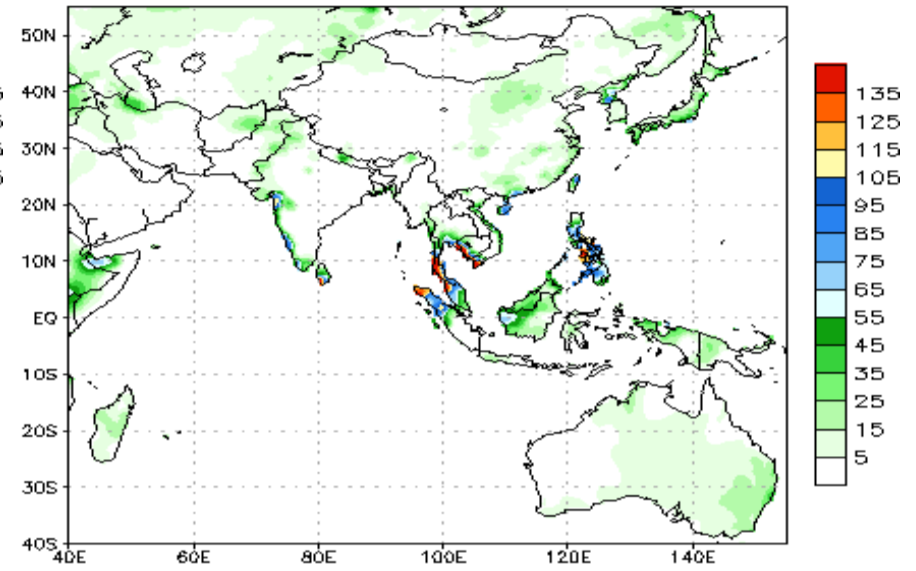


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 14Oct2015
14Oct2015–20Oct2015 Accumulation



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 14Oct2015
21Oct2015–27Oct2015 Accumulation

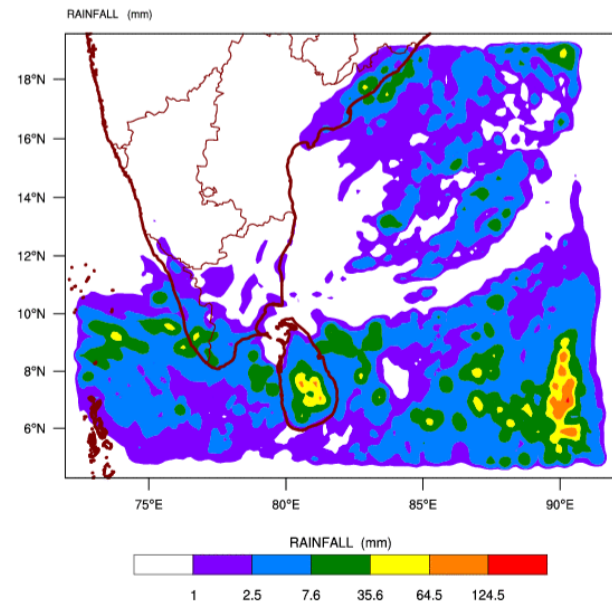


Bias correction based on last 30-day forecast error

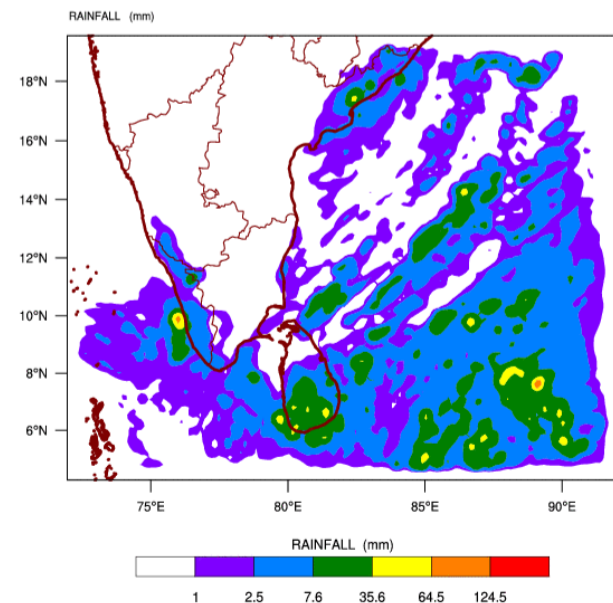
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 14-10-2015 valid for 03 UTC of 16-10-2015

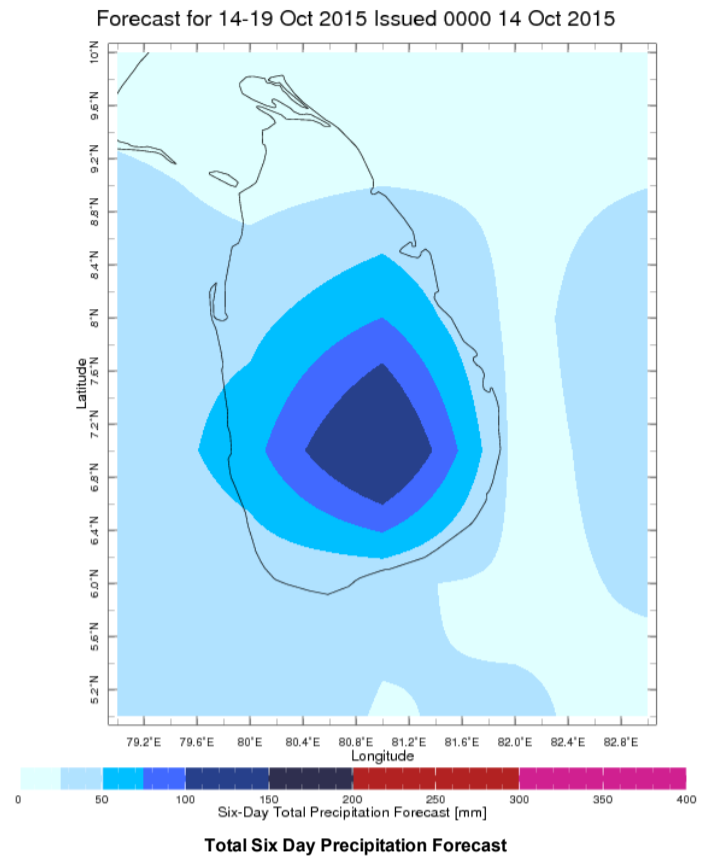
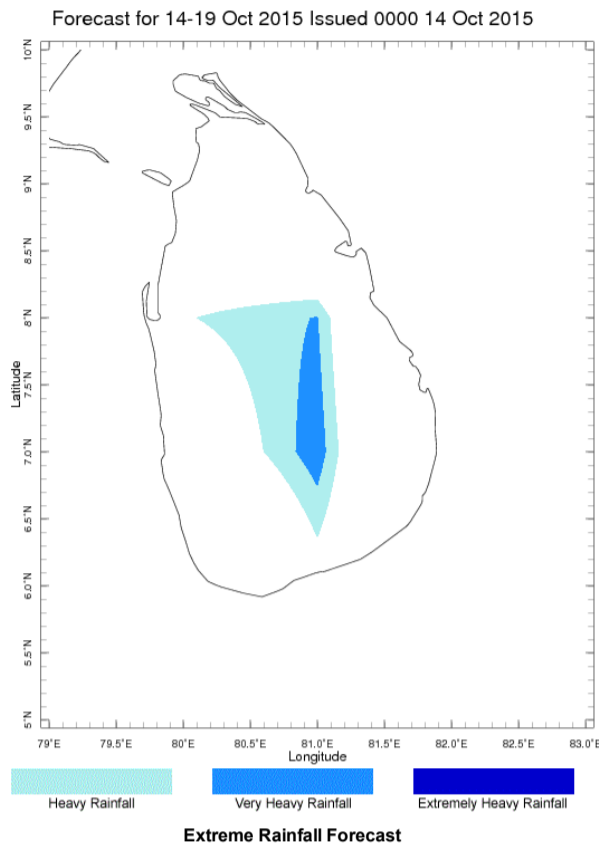


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 14-10-2015 valid for 03 UTC of 17-10-2015



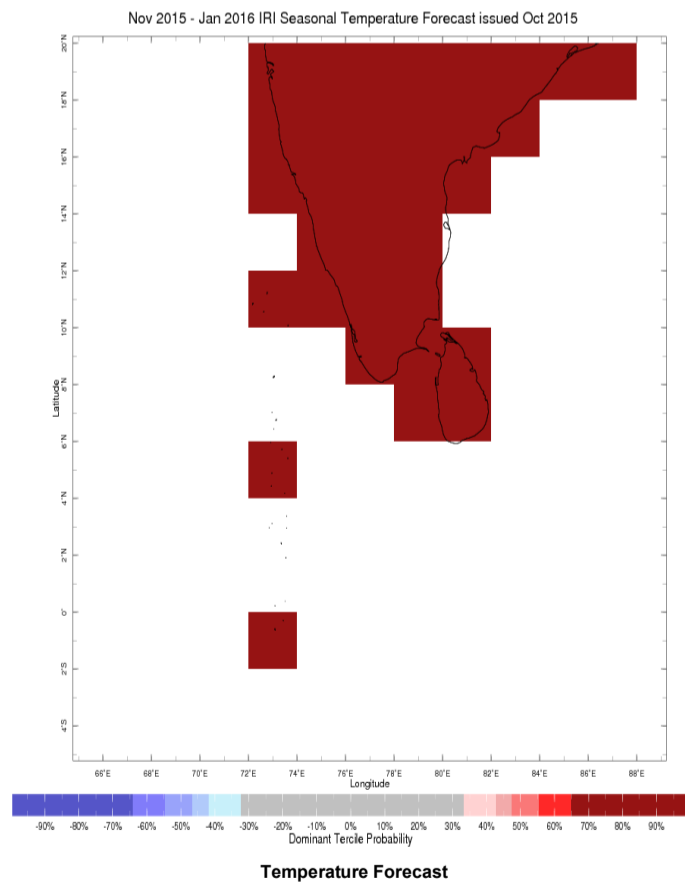
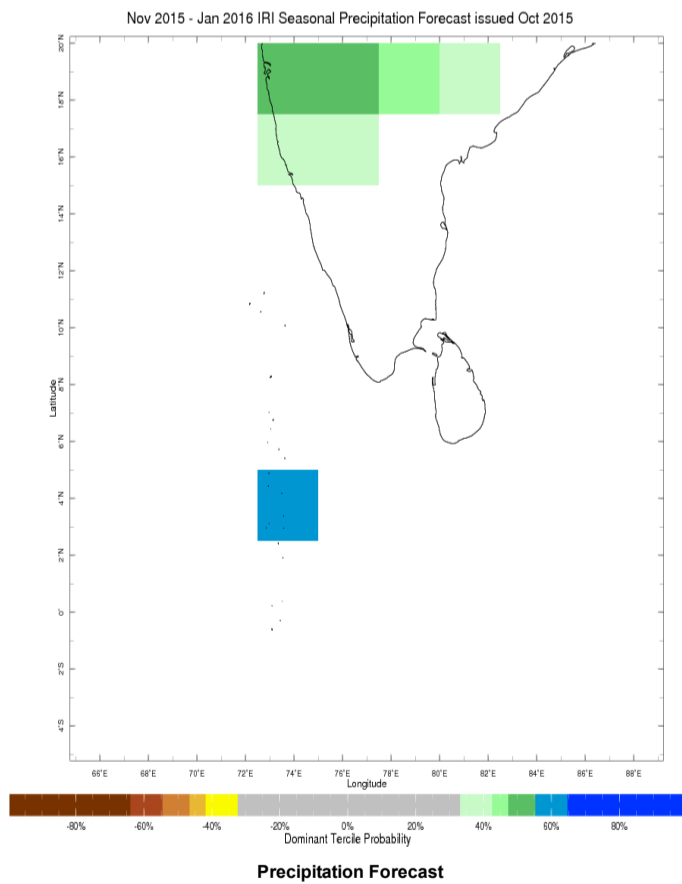
Weekly Rainfall Forecast

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.



Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



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