

Experimental Climate Monitoring and Prediction

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20 August 2015

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August 13, 2015 PACIFIC SEAS STATE

During late July through early-August 2015 the SST was at a moderate 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 moderate, and likely becoming strong, El Niño conditions during the July-September 2015 season in progress. Further strengthening between summer and fall is likely, with the event lasting into early 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1 °C above average temperature was observed around Sri Lanka.

MJO STATE

MJO continues to be weak and therefore shall not have a significant impact on the rainfall in Sri Lanka.

Highlights

Significant amount of rainfall was only observed in north central and central regions of the country on the 15th and 16th August with up to 70 mm magnitude. The rest of the country did not receive much rainfall. Dry conditions were observed in the northern, western and eastern regions of the country. NOAA models predict rainfall in south western and central regions of the country in the next fortnight.

Summary

Monitoring

Weekly Monitoring: During the time period 11th August – 17th August 2015, the whole country received average rainfall up to 20 mm. On 11th, 12th and 13th August, the whole country did not receive much rainfall. On 14th August northern region of Moneragala and eastern region of Polonnaruwa received rainfall up to 30 mm. Rainfall up to 70 mm observed in North central province, Vavuniya, Mullaitivu, Mannar, Trincomalee, Matale, northern region of Kandy, eastern regions of Kurunegala and Puttalam, northern region of Kegalle on 15th August. Kurunegala, Puttalam, Gampaha, Anuradhapura, Hambantota, western region of Polonnaruwa, northern region of Matale and western region of Matara received rainfall up to 70 mm on 16th August. On 17th August, southern region of Kurunegala received rainfall up to 70 mm.

Monthly Monitoring: In the month July 2015, south western region of the country received above average rainfall of up to 6 mm/day. The rest of the country received below average rainfall during this month.

Predictions

14 day prediction: NOAA NCEP models predict rainfall in south western region of the country during 19th August– 1st September. During the first week, south western region shall receive rainfall up to 45 mm and central and north central regions shall receive rainfall up to 35 mm. South western region shall receive up to 65 mm rainfall in the following week and the rest of the country shall receive rainfall up to 45 mm.

IMD WRF & IRI Model Forecast: According to the IMD WRF model western and eastern regions of the country shall receive rainfall up to 7 mm and some regions in Colombo and Puttalam shall receive rainfall up to 35 mm on 21st August. The same rainfall pattern shall continue on the 22nd as well. IRI CFS model predicts up to 50 mm total 6 day rainfall on the northern, north eastern, central and south western regions of the country during 19th- 24th August 2015.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for August to October, 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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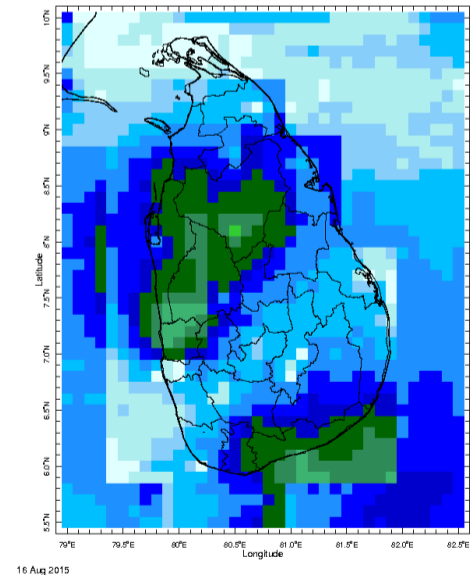
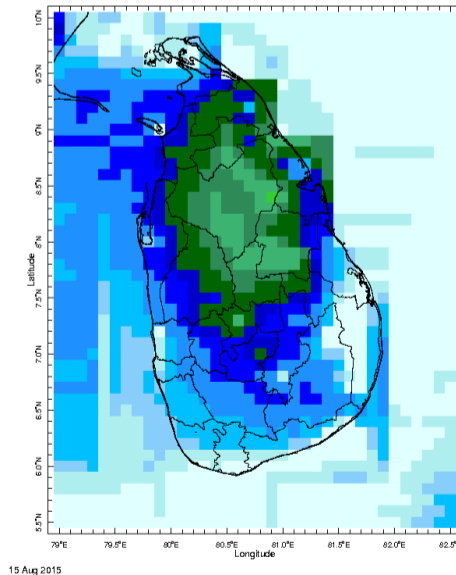
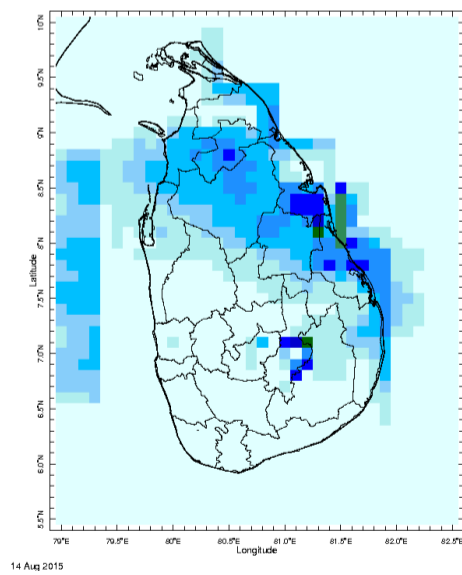
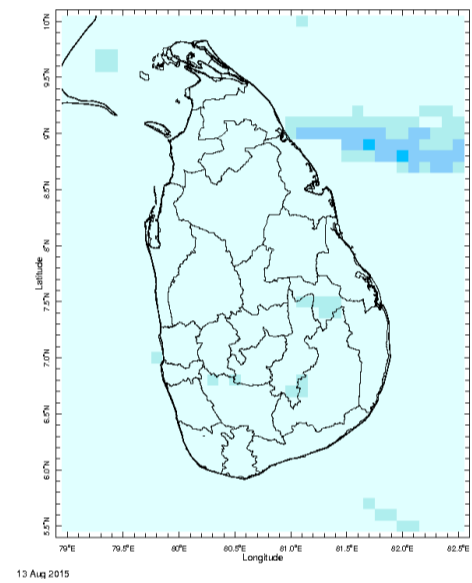
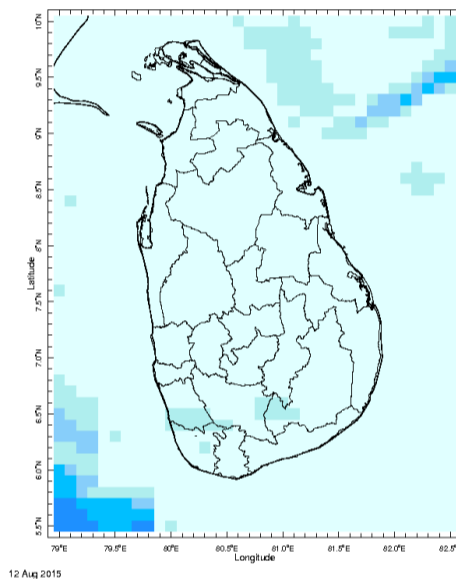
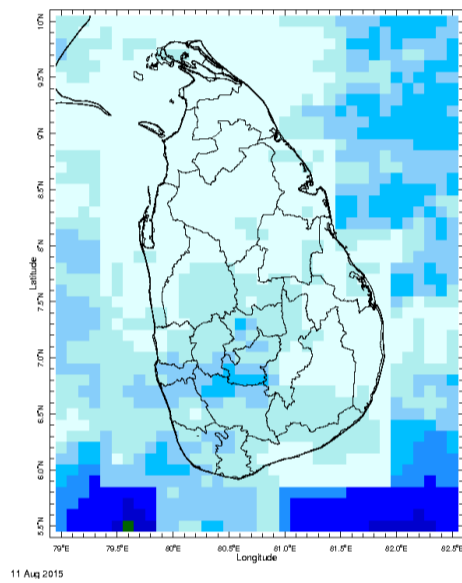
Weekly Hydro- Meteorological Report for Sri Lanka

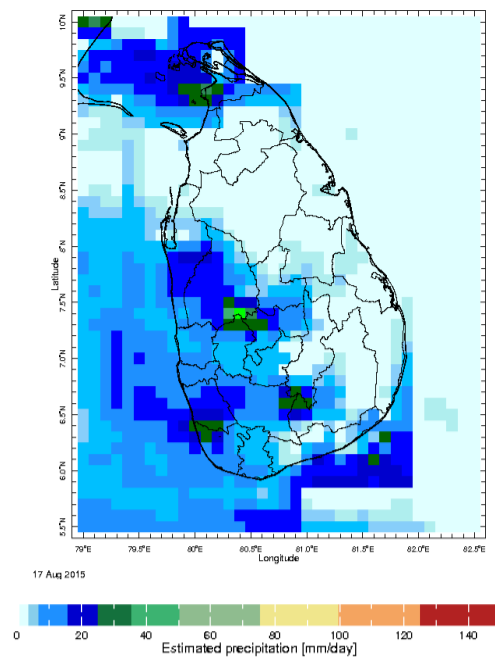
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Daily Rainfall Monitoring

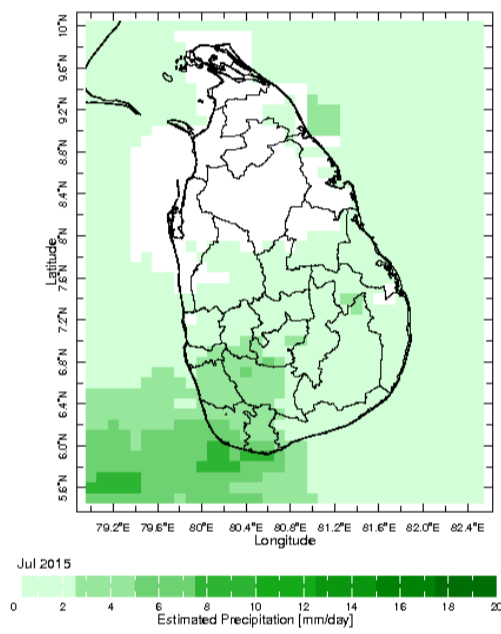
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



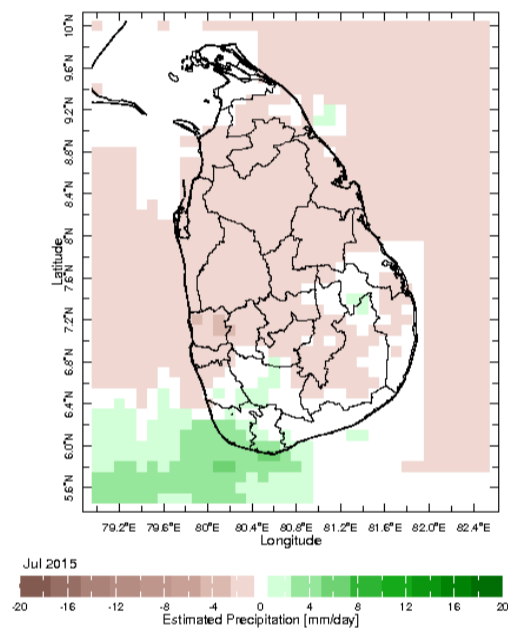


Monthly Rainfall Monitoring

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

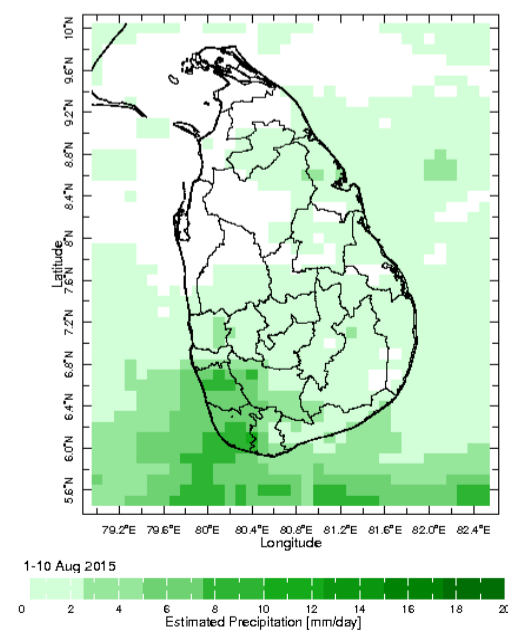
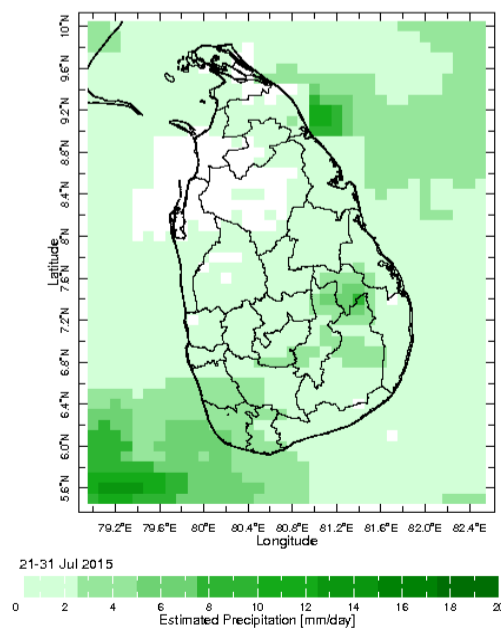


Monthly Average

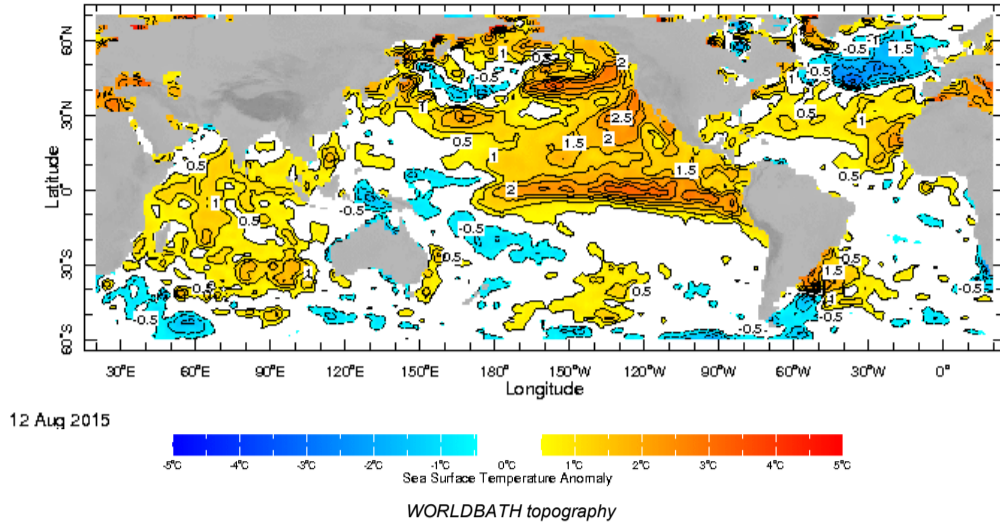


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

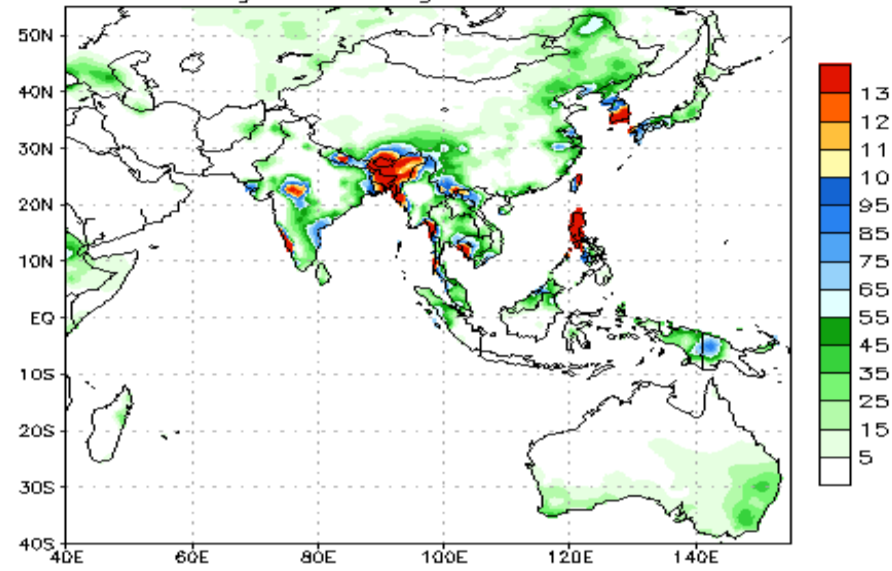


Weekly Average SST Anomalies

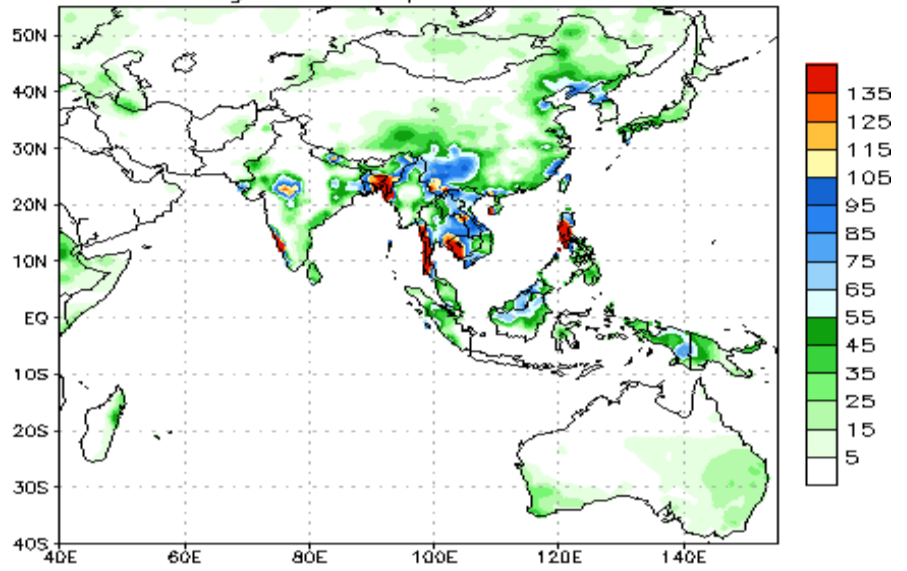


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 19Aug2015
19Aug2015-25Aug2015 Accumulation



NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 19Aug2015
26Aug2015-01Sep2015 Accumulation

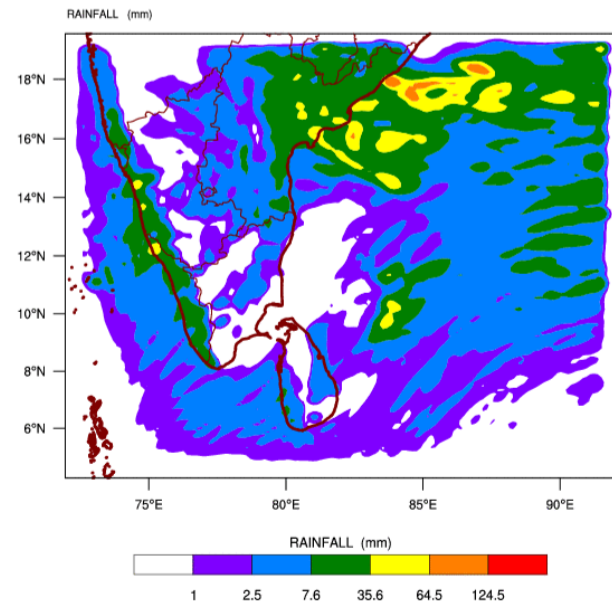


Bias correction based on last 30-day forecast error

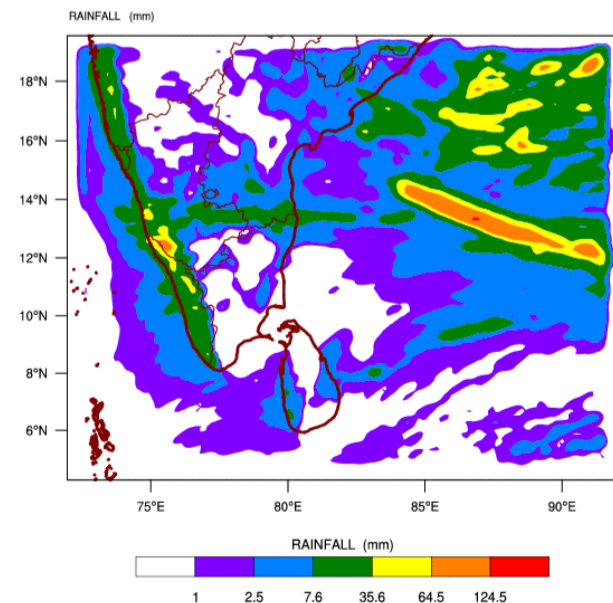
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 19-08-2015 valid for 03 UTC of 21-08-2015

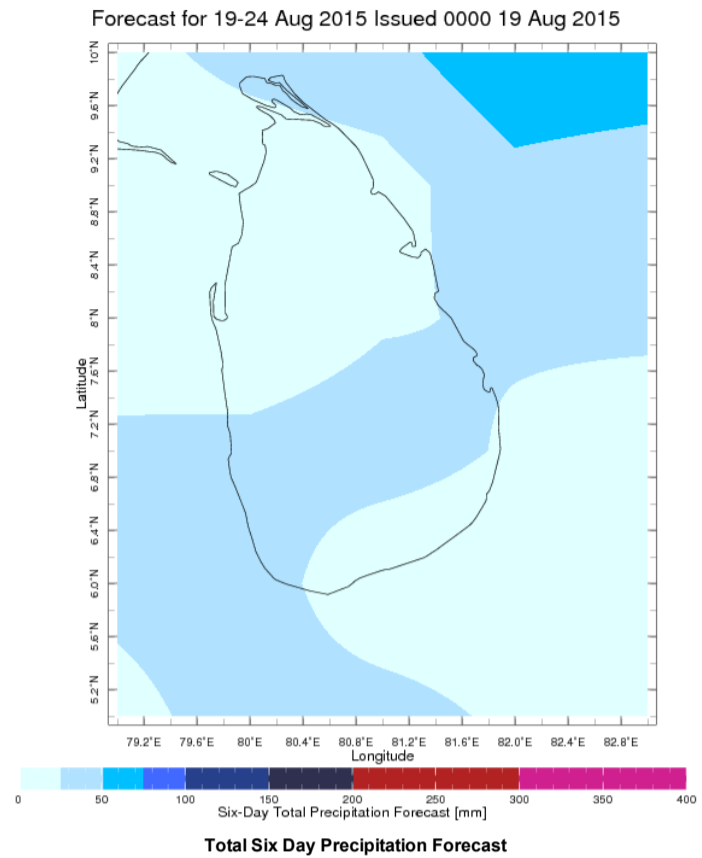
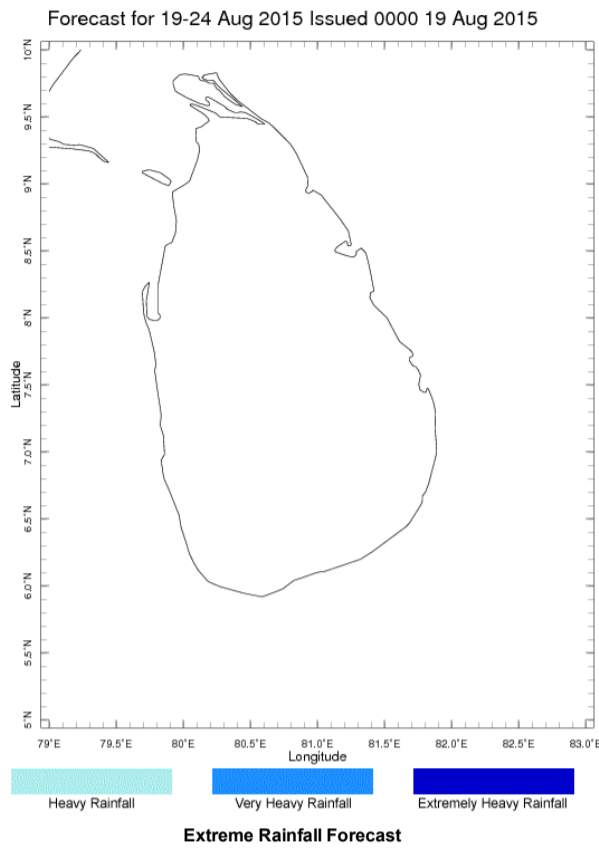


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 19-08-2015 valid for 03 UTC of 22-08-2015



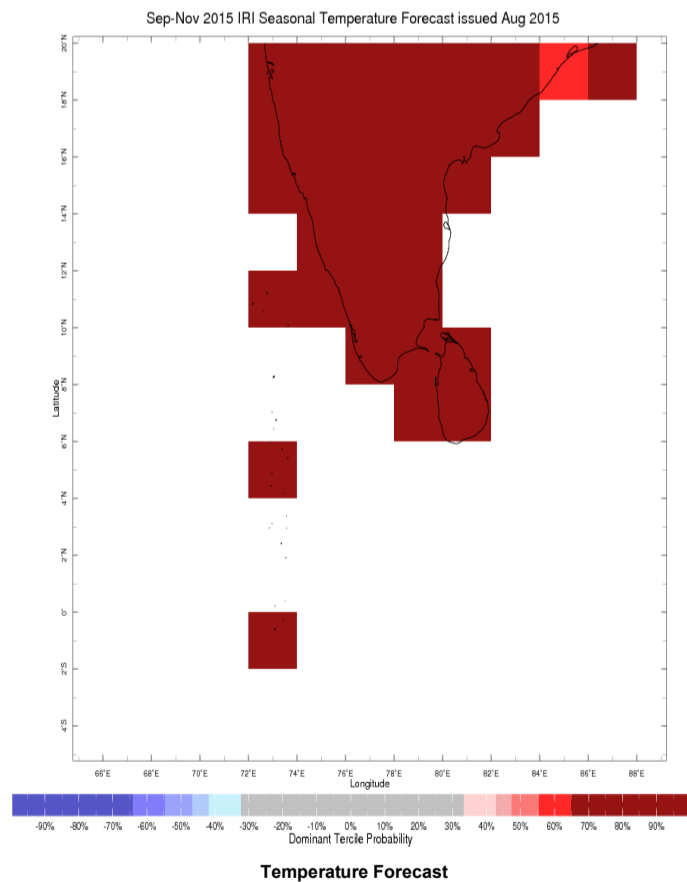
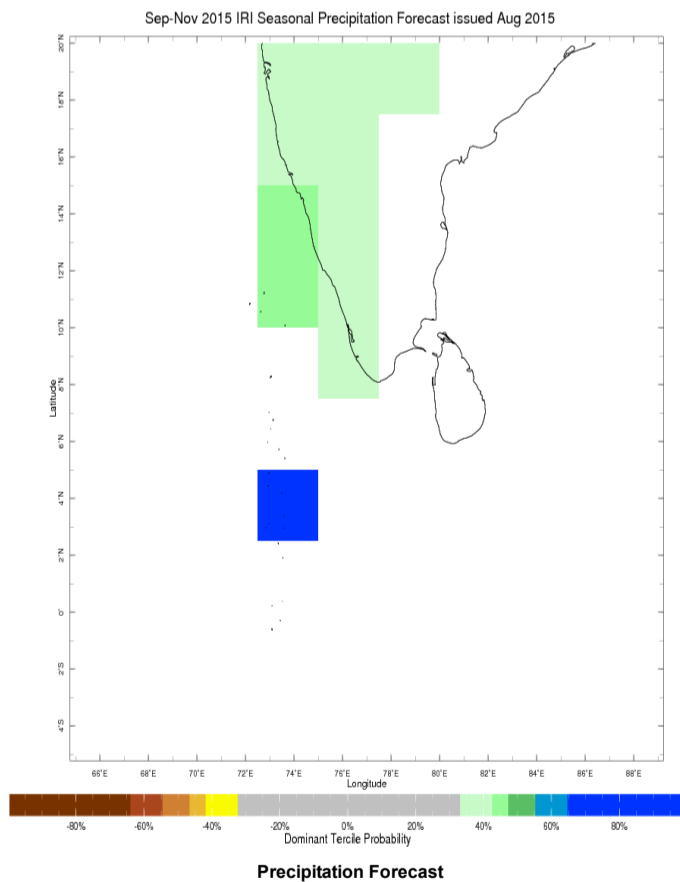
Weekly Rainfall Forecast

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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