

## Experimental Climate Monitoring and Prediction

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16 July 2015

### 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/>

### July 9, 2015 PACIFIC SEAS STATE

During late June through early-July 2015 the SST was at a moderate El Niño level. The 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 El Niño conditions during the June-August 2015 season in progress, likely strengthening further between summer and fall, and lasting into early 2016.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

1°C above average temperature was observed around Sri Lanka and the anomaly goes further up towards the south sea.

### MJO STATE

MJO is in Phase 8 and therefore shall suppress rainfall in Sri Lanka in a significant manner.

### Highlights

During 8<sup>th</sup> July – 14<sup>th</sup> July 2015 Western and Southern provinces mostly received rainfall up to 20-50 mm. On 10<sup>th</sup> July rainfall up to 125 mm was observed in the ocean near Matara while 50 mm rainfall was observed in Ratnapura and Kalutara. Rainfall up to 70 mm was observed in the southern region of Nuwara Eliya on 11<sup>th</sup> July. NOAA models predict high rainfall in south western region of the country in the next fortnight.

### Summary

#### Monitoring

**Weekly Monitoring:** During the time period 8<sup>th</sup> July – 14<sup>th</sup> July 2015, south western region of the country mostly received rainfall. There was no rainfall on 8<sup>th</sup> July, and on 9<sup>th</sup> July rainfall up to 30 mm/day was observed in eastern region of Kalutara, western region of Ratnapura and the northern region of Galle districts. Rainfall up to 125 mm was observed in the ocean near Matara district while Ratnapura, Kalutara, southern region of Kegalle and Colombo, eastern region of Kandy districts received rainfall up to 40 mm on 10<sup>th</sup> July. On 11<sup>th</sup> July the ocean near Galle received rainfall up to 40 mm. Rainfall up to 70 mm was observed in the southern region of Nuwara Eliya district on 12<sup>th</sup> July and on 13<sup>th</sup> July eastern region of Badulla received rainfall up to 10 mm followed by up to 10 mm rainfall on 14<sup>th</sup> July Colombo, Kalutara, Galle, Matara, Hambantota, Ratnapura and the southern region of Moneragala.

**Monthly Monitoring:** In the month June 2015, western, Sabaragamuwa and south eastern regions of the country received above average rainfall of up to 8 mm/day. The rest of the country received below average rainfall during this month.

#### Predictions

**14 day prediction:** NOAA NCEP models predict high rainfall in southern region of the country during 15<sup>th</sup> – 21<sup>st</sup> July. Up to 85 mm total rainfall is expected during the week in the south western region while the rest of the country shall receive rainfall up to 50 mm. Less rainfall (about 55 mm) is expected during 22<sup>nd</sup> - 28<sup>th</sup> in the south western region of the country.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model Western region of the country shall receive rainfall up to 35 mm/day while Ratnapura district and northern region of Galle shall receive rainfall up to 65 mm on 17<sup>th</sup> July. The rest of the country shall receive slight amounts of rainfall. The same pattern of rainfall is expected on the 18<sup>th</sup> as well. IRI CFS model also predicts high rainfall in south western region of the country during 15<sup>th</sup> – 20<sup>th</sup> July.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for July to September, 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

<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

**Weekly Hydro- Meteorological Report for Sri Lanka**

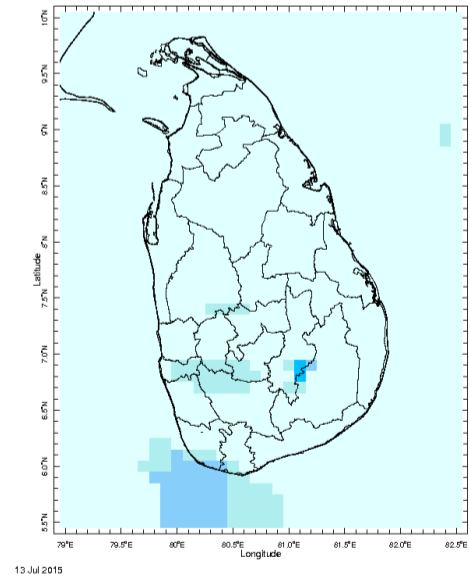
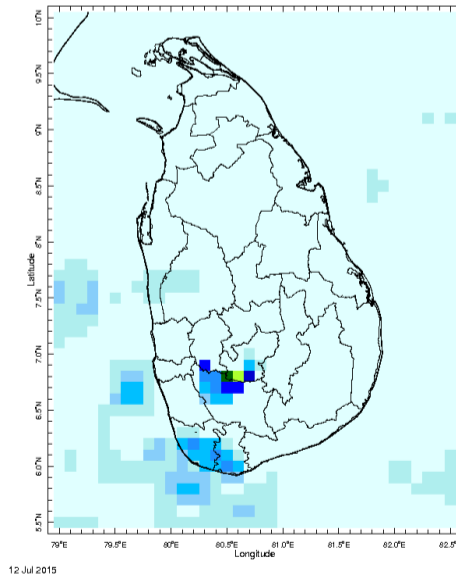
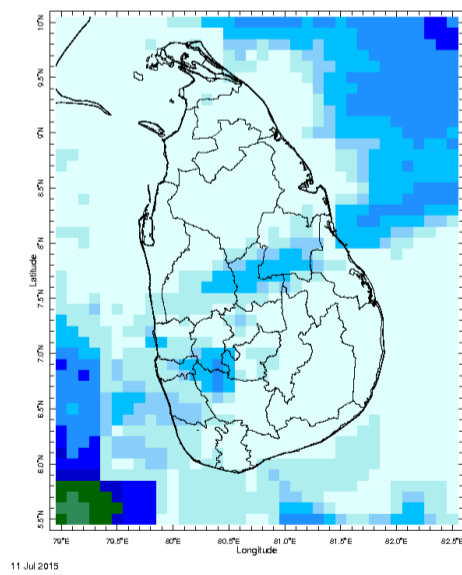
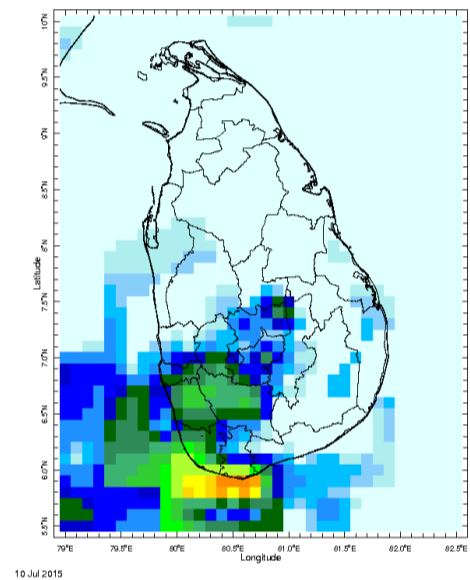
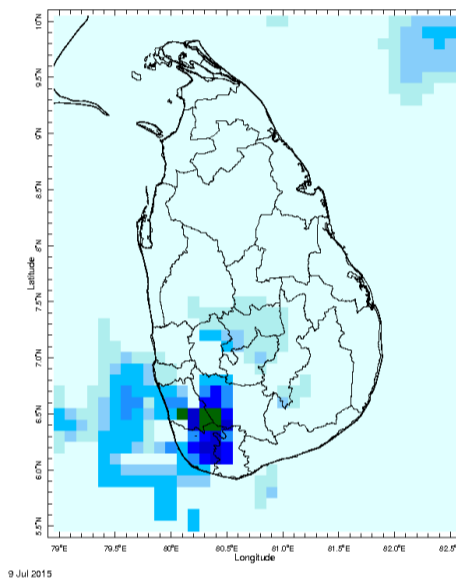
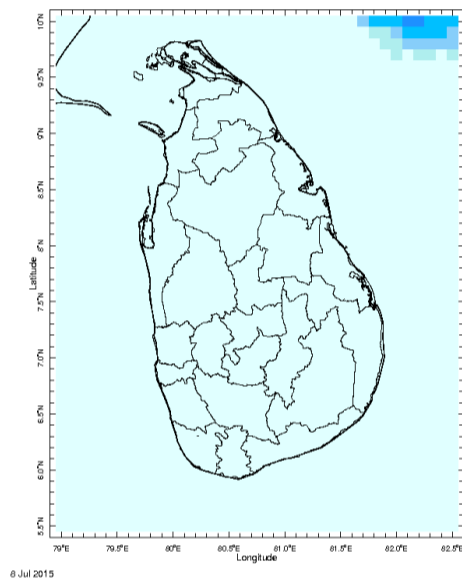
**Inside This Issue**

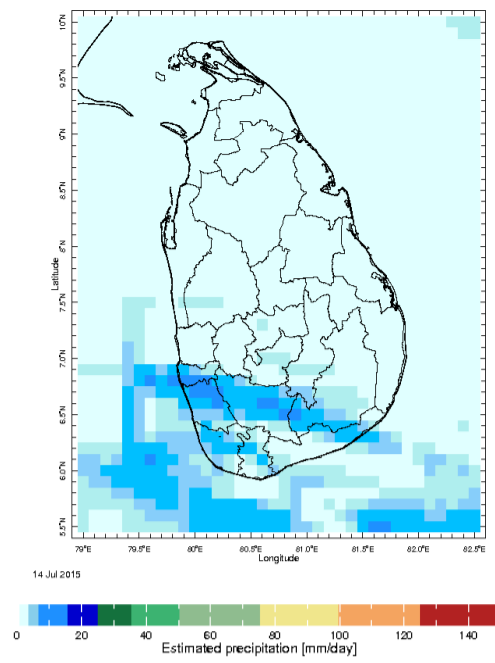
1. **Monitoring**
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**Daily Rainfall Monitoring**

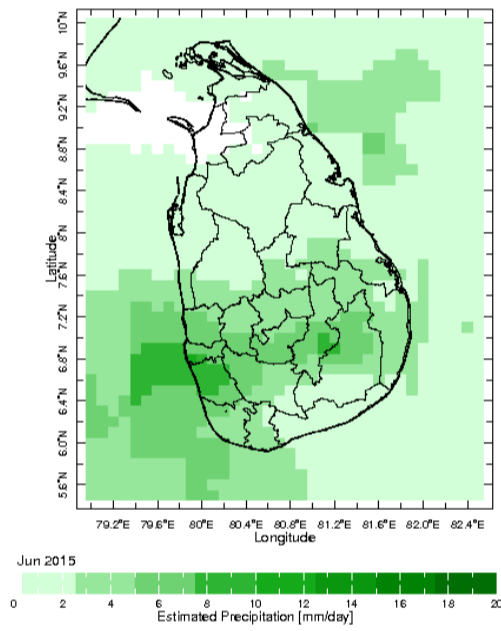
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



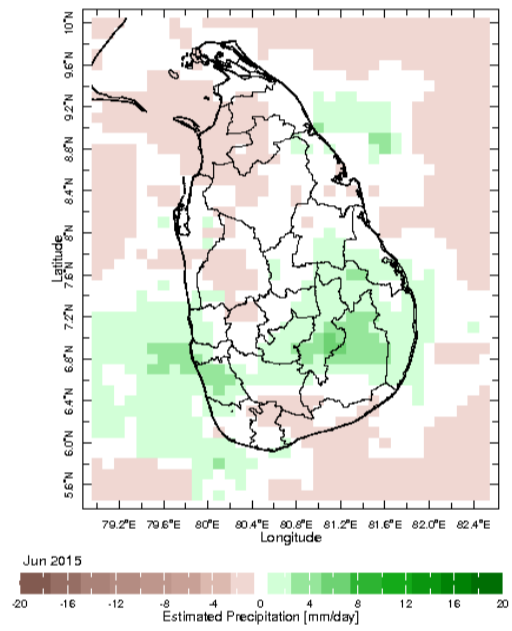


## Monthly Rainfall Monitoring

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

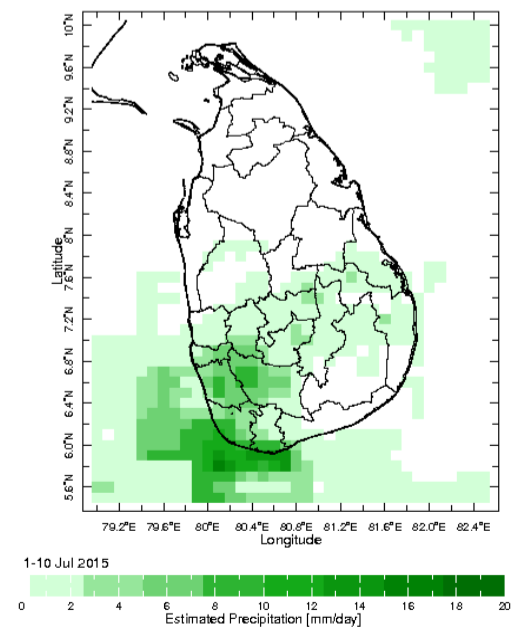
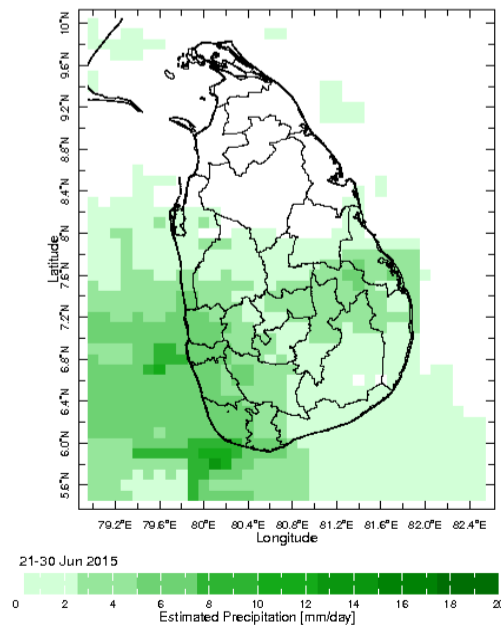


Monthly Average

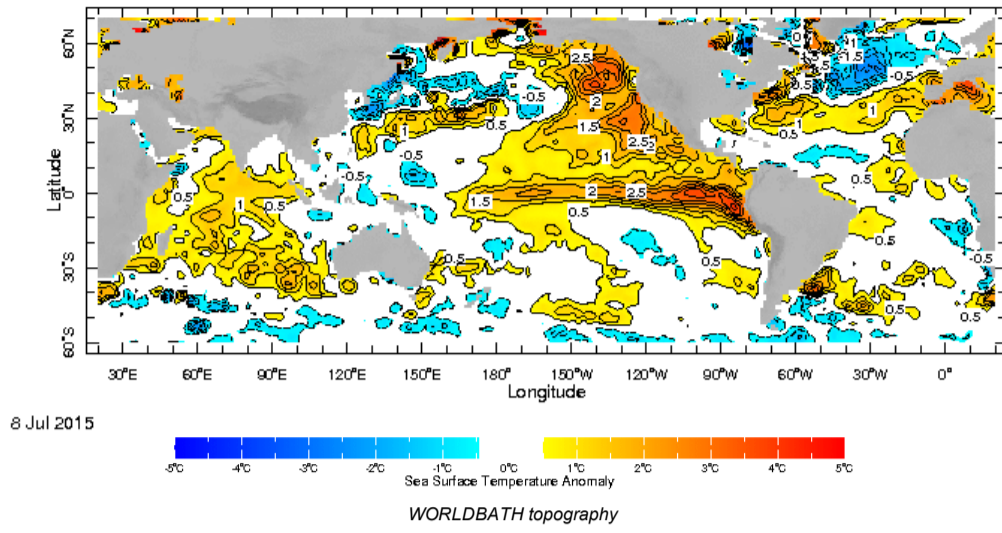


Monthly Anomaly

## Dekadal (10 Day) Satellite Derived Rainfall Estimates

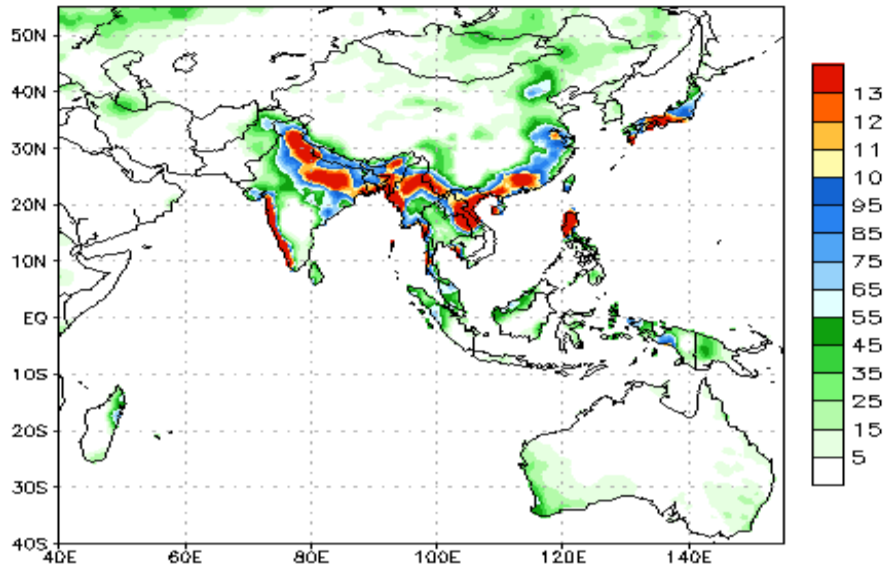


**Weekly Average SST Anomalies**



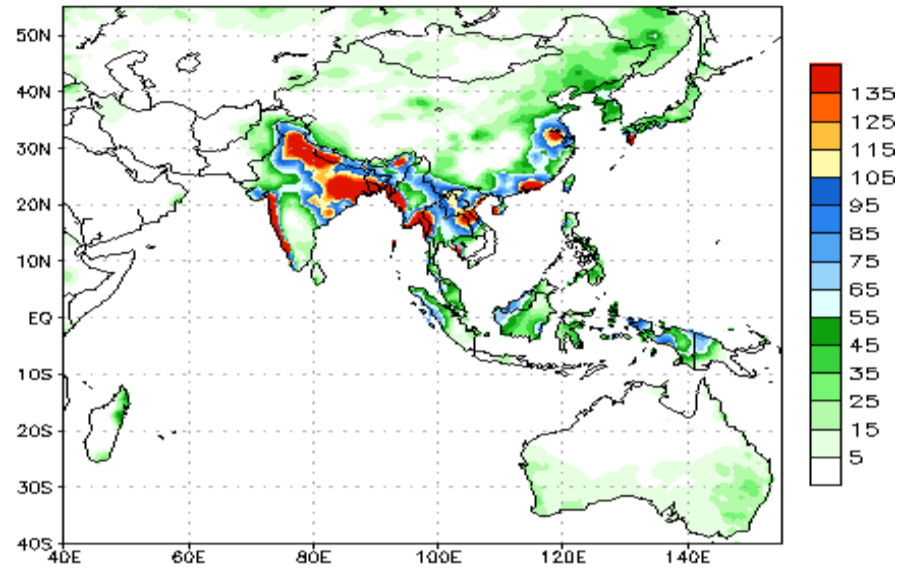
**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 15Jul2015  
15Jul2015–21Jul2015 Accumulation



Bias correction based on last 30-day forecast error

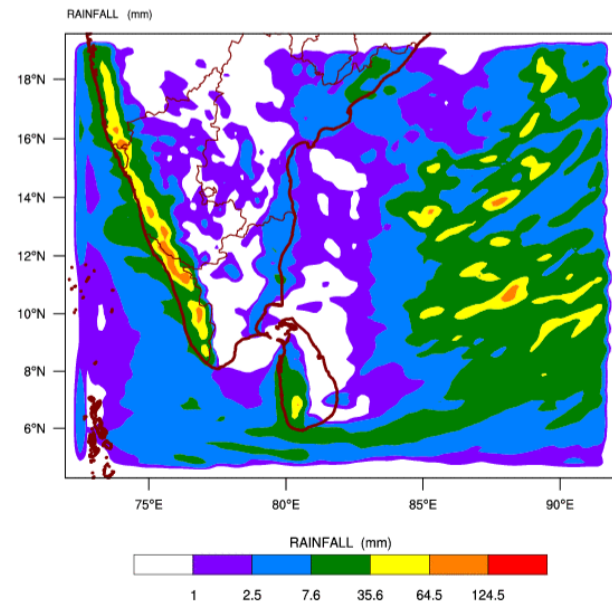
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 15Jul2015  
22Jul2015–28Jul2015 Accumulation



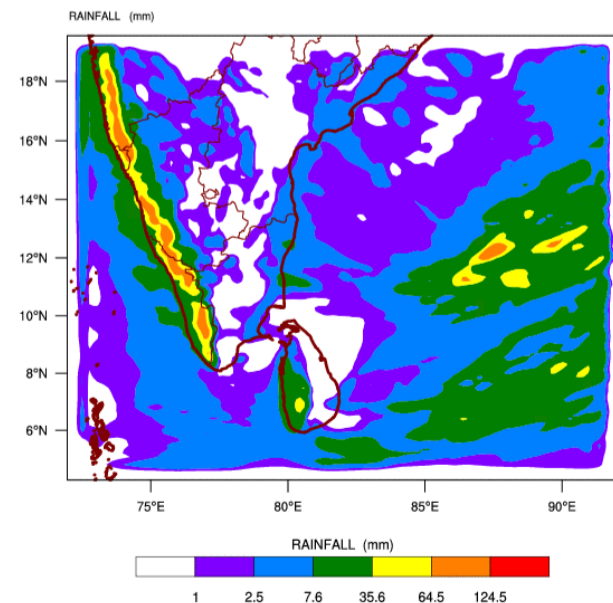
Bias correction based on last 30-day forecast error

**WRF Model Forecast (from IMD Chennai)**

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 15-07-2015 valid for 03 UTC of 17-07-2015

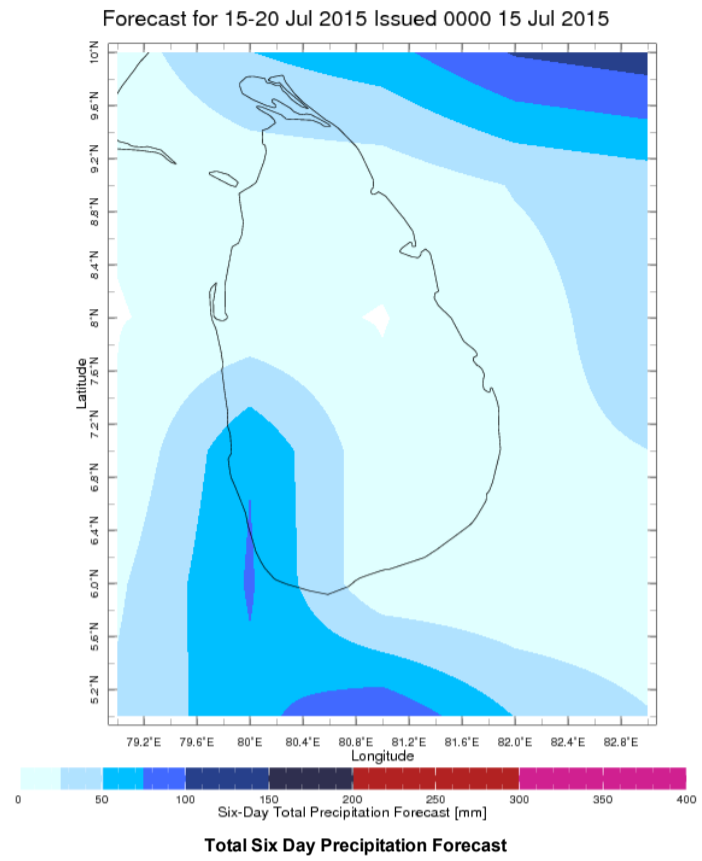
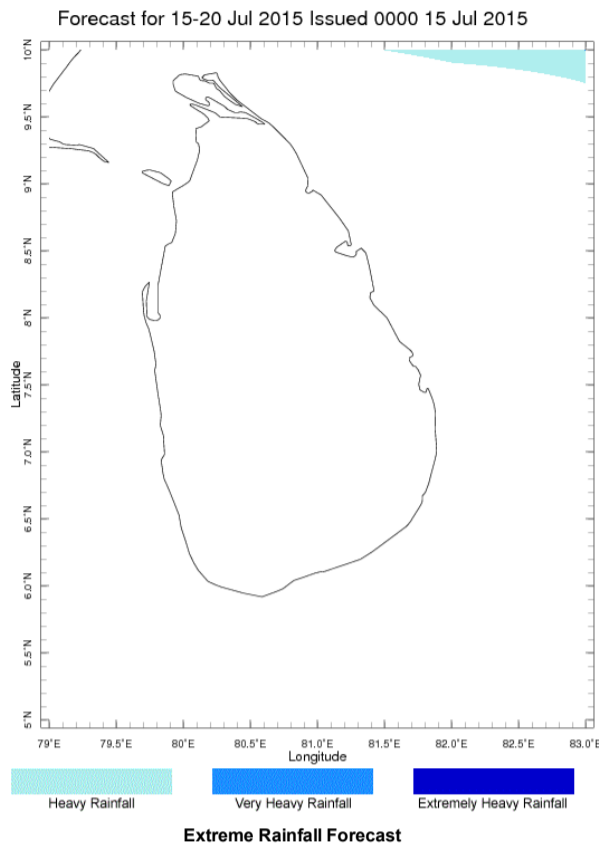


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 15-07-2015 valid for 03 UTC of 18-07-2015



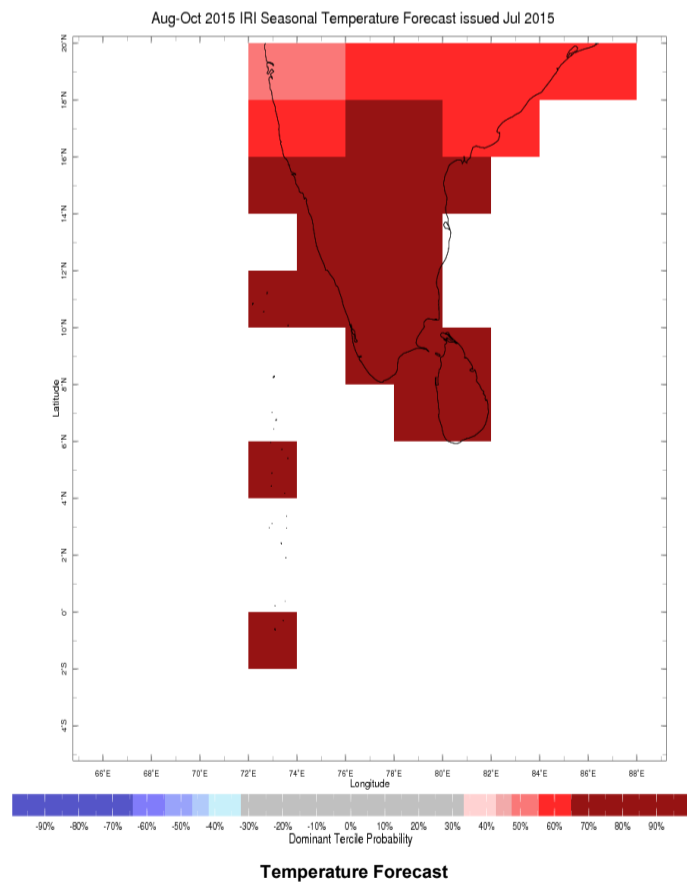
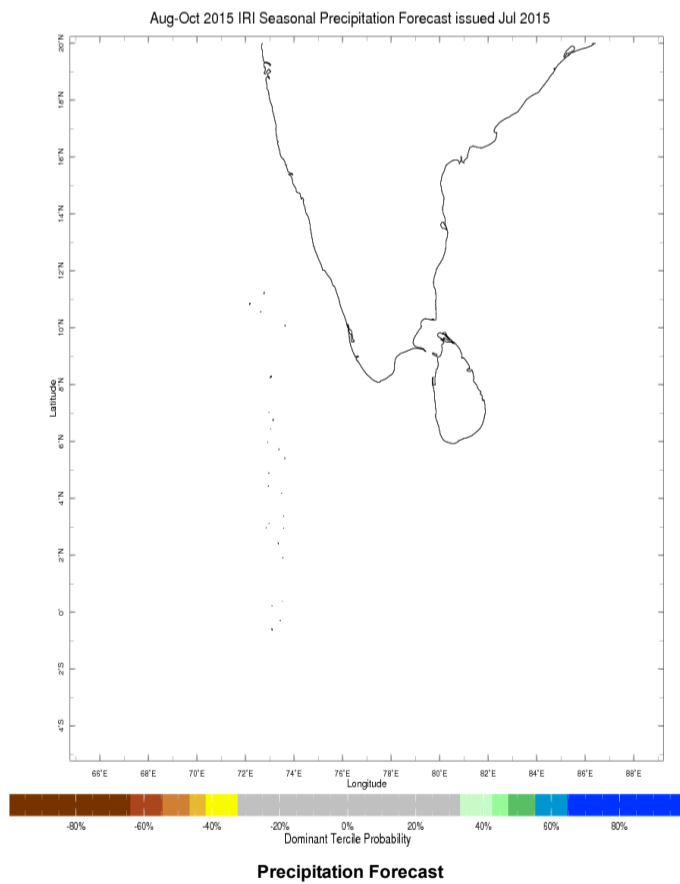
## Weekly Rainfall Forecast

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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