

## Experimental Climate Monitoring and Prediction

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10 September 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/>

### August 20, 2015 PACIFIC SEAS STATE

During late July through early-August 2015 the 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 August-October 2015 season in progress. Some further strengthening into fall is likely, with the event lasting into spring 2016.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

1 °C above average temperature was observed around Sri Lanka. Indian Ocean Dipole is also active.

### MJO STATE

MJO is weak and therefore shall not influence the rainfall in Sri Lanka.

### Highlights

Up to 40 mm rainfall was observed in various parts of the country during the time period 1<sup>st</sup>-7<sup>th</sup> September. Rainfall was mostly observed in northern and north central regions of the country. The entire country received rainfall on 3<sup>rd</sup> September where Badulla received rainfall up to 100 mm. Trincomalee and southern region of Moneragala received 70 mm rainfall on 6<sup>th</sup> September. Every prediction model predict high rainfall in western and south western regions during the next week.

### Summary

#### Monitoring

**Weekly Monitoring:** During 1<sup>st</sup>-7<sup>th</sup> of September, rainfall observed mostly in North central region. On 1<sup>st</sup> September, rainfall up to 40 mm observed in the southern region of Mullaitivu and on 2<sup>nd</sup> September, rainfall up to 30 mm observed in Ampara. Entire country received heavy rainfall on 3<sup>rd</sup> September while Badulla received rainfall up to 100 mm and Galle, Anuradhapura, Kurunegala received rainfall up to 90 mm. Vavuniya, southern region of Anuradhapura and ocean near Jaffna received rainfall up to 40 mm on 4<sup>th</sup> September and on 5<sup>th</sup> September, Mullaitivu observed rainfall up to 40 mm. Trincomalee and southern region of Moneragala received rainfall up to 70 mm on 6<sup>th</sup> September. On 7<sup>th</sup> September, only southern region of Kalutara and northern region of Galle received rainfall up to 30 mm.

**Monthly Monitoring:** In August 2015 most of south western, north western and north central regions received above average rainfall. Colombo district, central and eastern provinces received below average rainfall. Highest rainfall was observed in Ratnapura district. Southern sea of the country also received above average rainfall during this month.

#### Predictions

**14 day prediction:** NOAA NCEP models predict relatively high rainfall in the south western region of the country compared to the rest of the country during 9<sup>th</sup>-15<sup>th</sup> September. South western region shall receive total rainfall up to 45 mm during this week while rest of the country shall receive total rainfall up to 35 mm. These models predict further increment in rainfall during 16<sup>th</sup>-22<sup>nd</sup> September where up to 75 mm total rainfall expected in the south western region and total rainfall up to 55 mm in the rest of the country

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model high rainfall up to 65 mm is expected in the coastal region of Puttalam district on 11<sup>th</sup> September. Western and south western regions shall receive up to 35 mm rainfall on the same day. Other regions shall receive slight amounts of rainfall. Rainfall shall decrease on 12<sup>th</sup> September but western region shall continue receiving 35 mm rainfall. Light rainfall is possible in other regions of the country. IRI CFS models predict total rainfall up to 50 mm in south eastern, central and south western regions during 8<sup>th</sup>- 13<sup>th</sup> September. Total rainfall up to 100 mm shall receive in the ocean near Colombo during this period.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for September to November, 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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- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

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

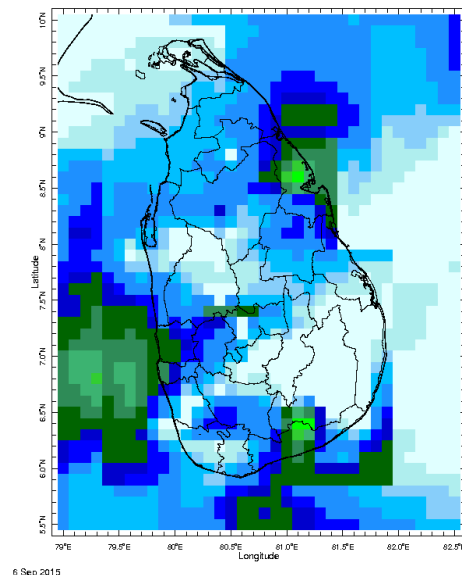
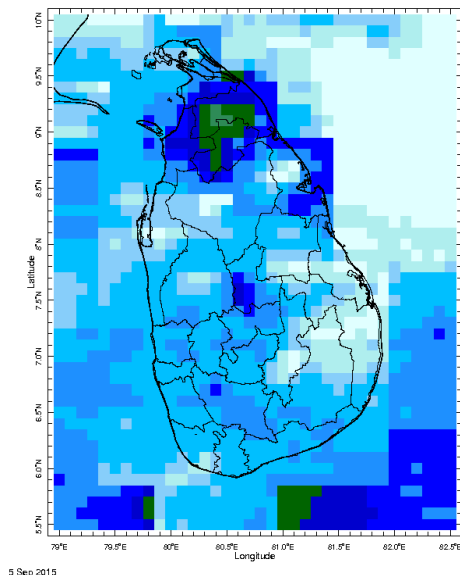
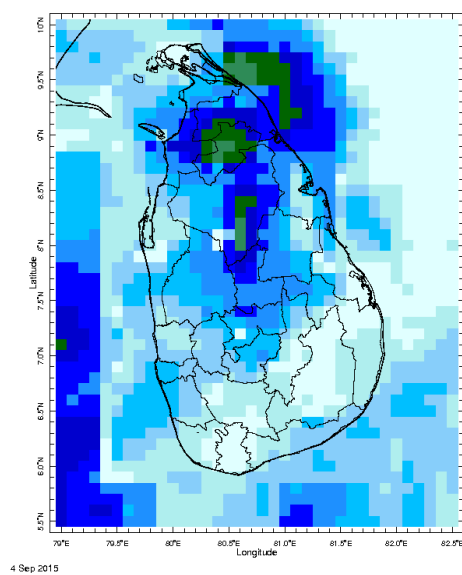
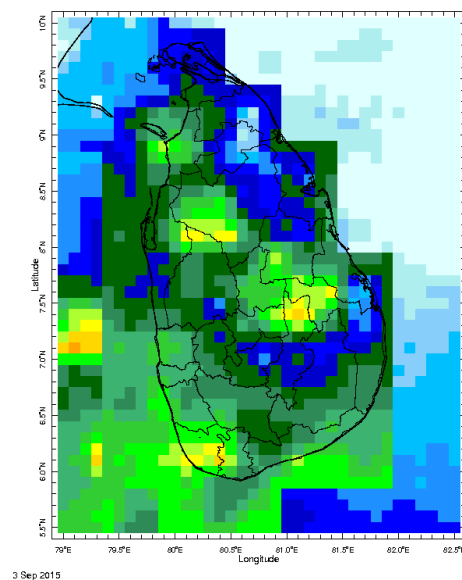
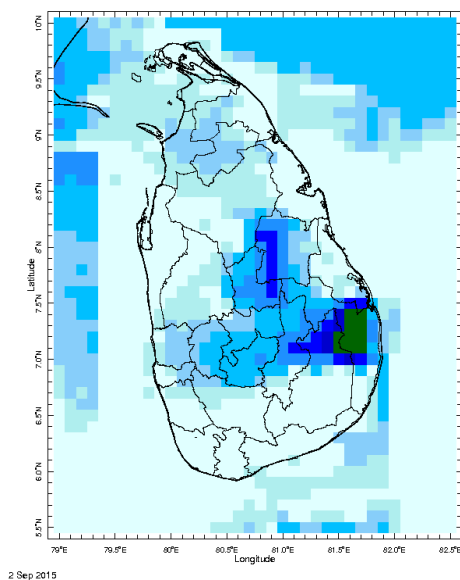
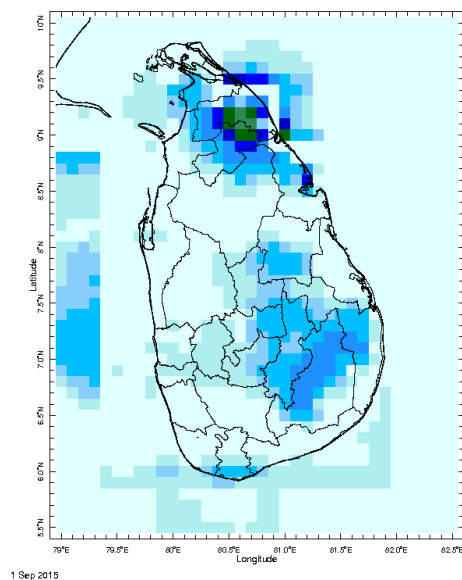
## Weekly Hydro- Meteorological Report for Sri Lanka

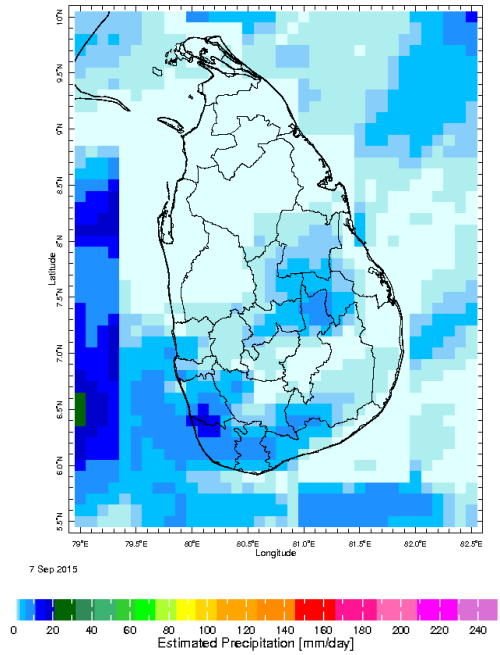
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### Daily Rainfall Monitoring

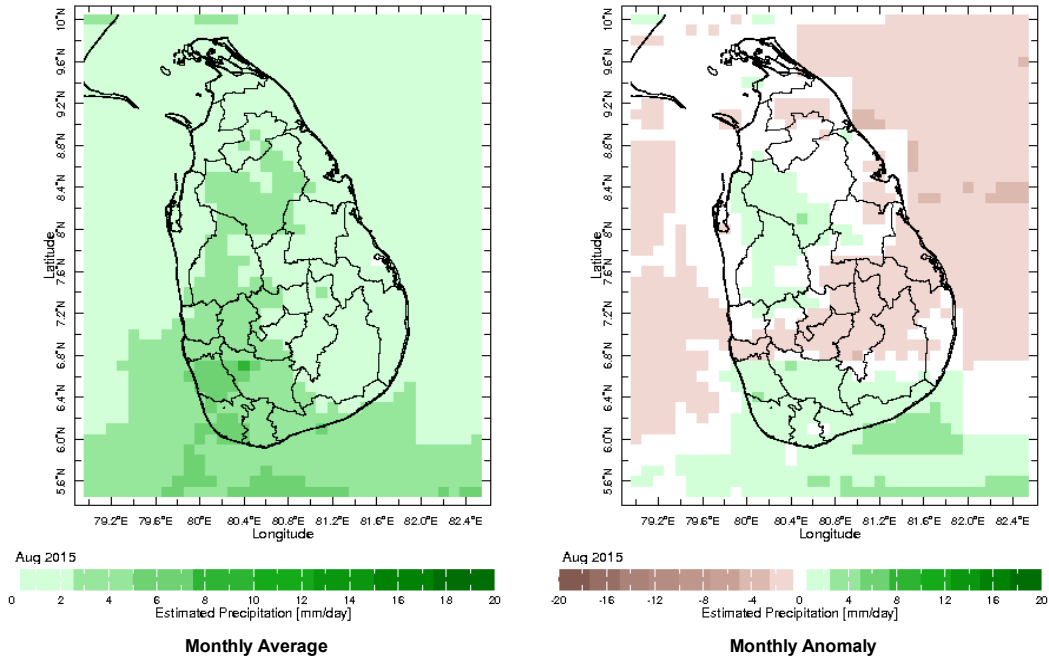
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



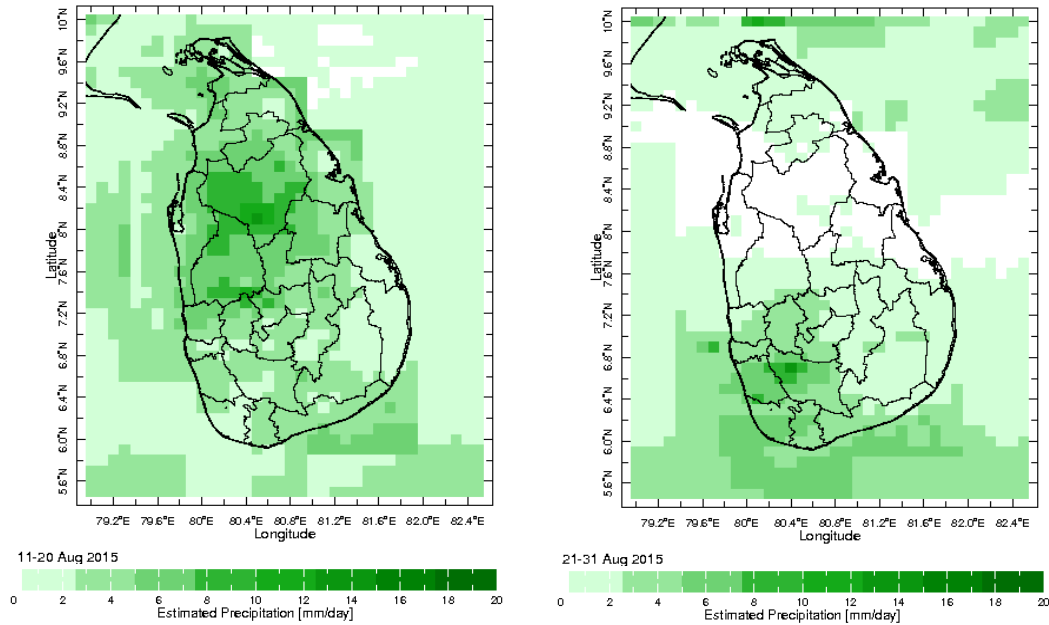


Monthly Rainfall Monitoring

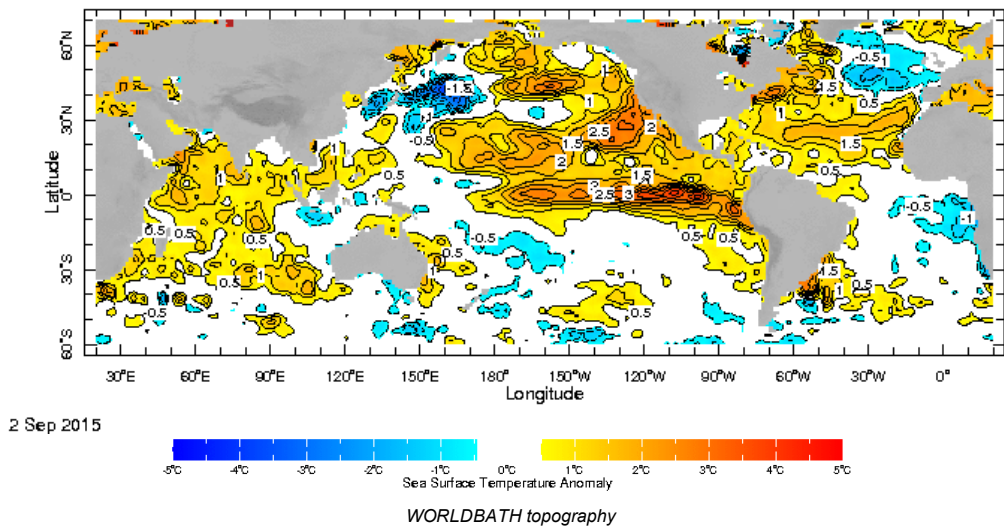
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



Dekadal (10 Day) Satellite Derived Rainfall Estimates

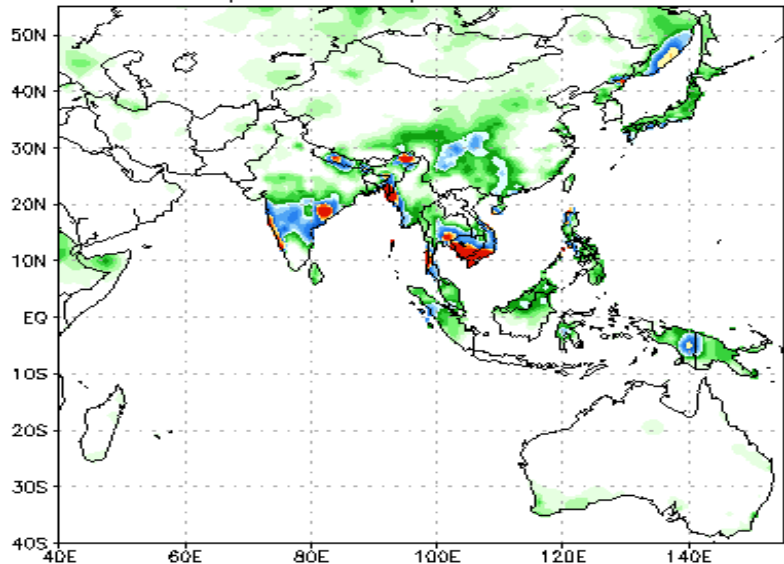


Weekly Average SST Anomalies



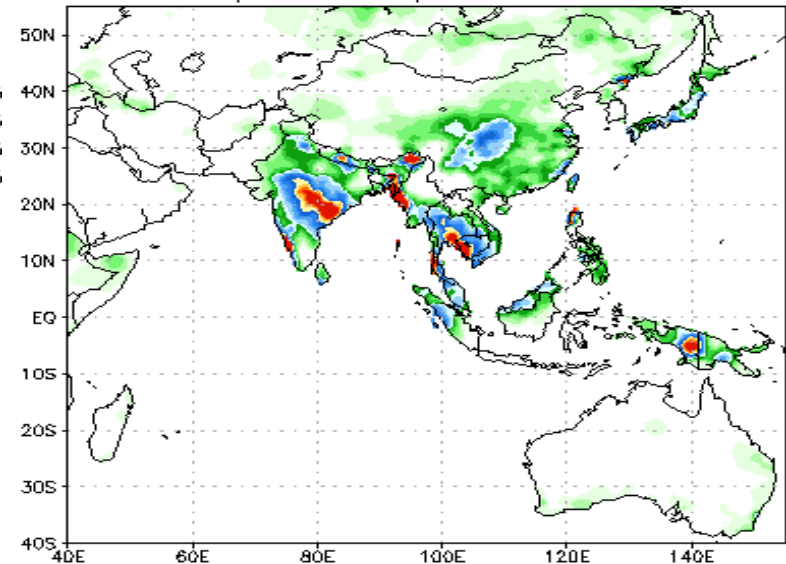
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 09Sep2015  
09Sep2015–15Sep2015 Accumulation



Bias correction based on last 30-day forecast error

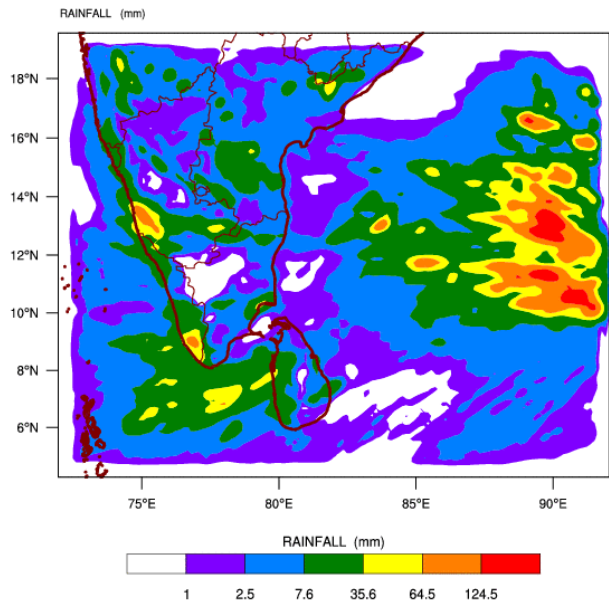
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 09Sep2015  
16Sep2015–22Sep2015 Accumulation



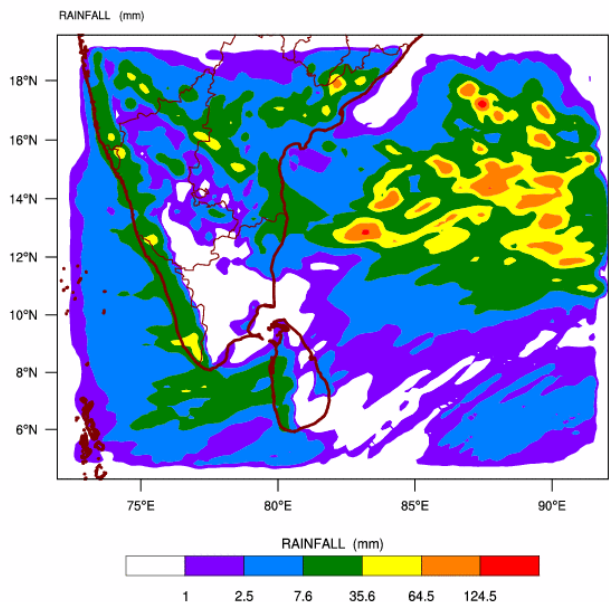
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 09-09-2015 valid for 03 UTC of 11-09-2015

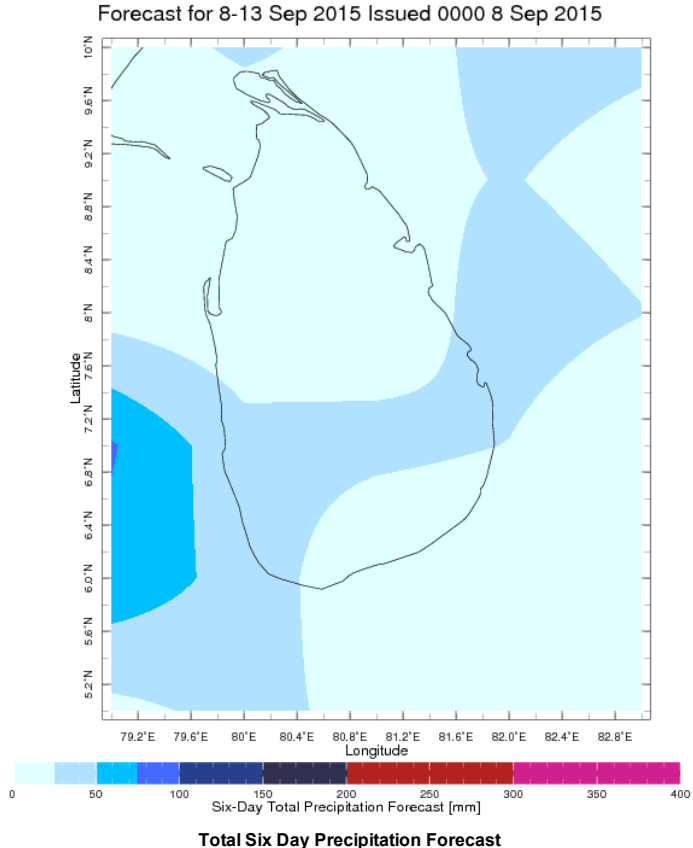
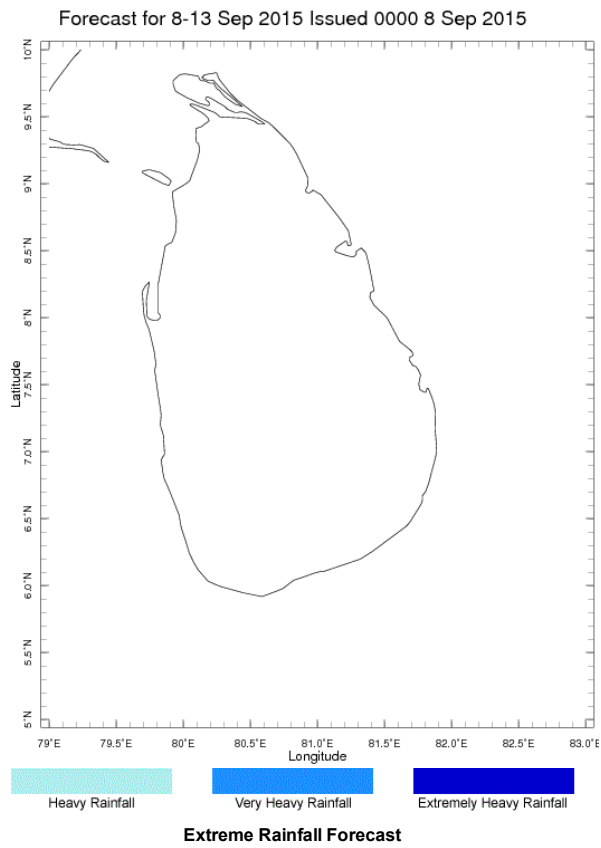


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 09-09-2015 valid for 03 UTC of 12-09-2015



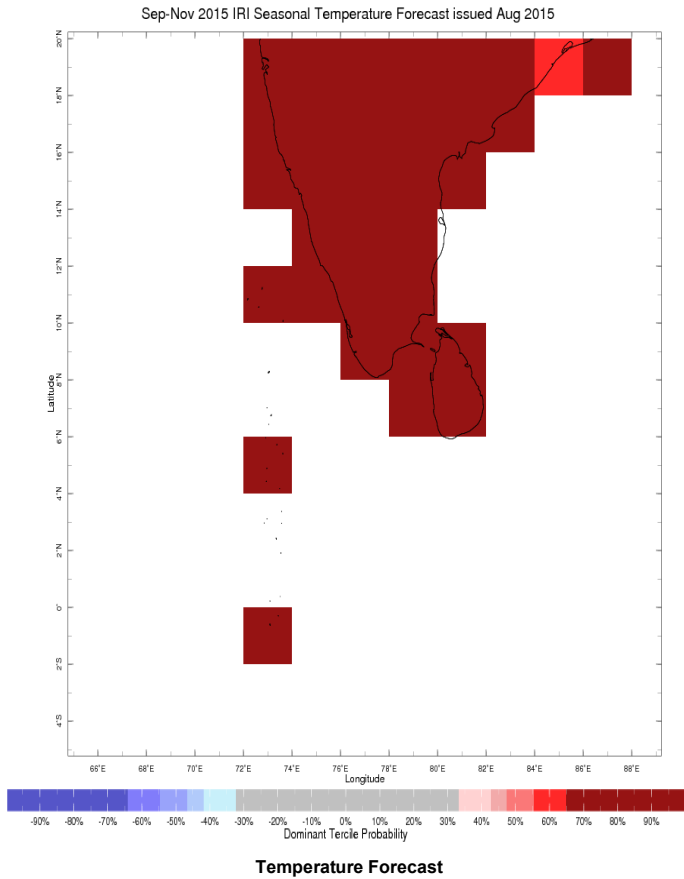
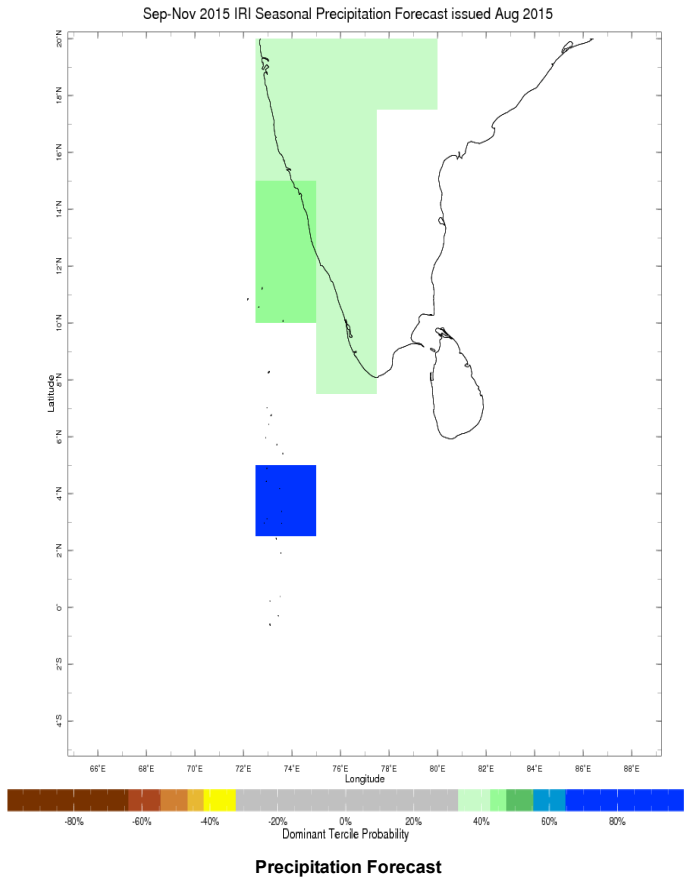
Weekly Rainfall Forecast

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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