

## Experimental Climate Monitoring and Prediction

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### 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/>

### November 12, 2015 PACIFIC SEAS STATE

During late October through early November 2015 the tropical Pacific SST was at a strong El Niño level. All atmospheric variables strongly 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 November-January 2015-16 season in progress.

Some slightly further strengthening is possible into early winter 2015-16, with the event slowly weakening during spring 2016.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

0.5 °C below average temperature was observed around Sri Lanka.

### MJO STATE

MJO phase is in 3 therefore shall slightly enhance rainfall in Sri Lanka.

### Highlights

Up to 40 mm rainfall was observed in northern, north eastern and north western regions of the country during the time period 10<sup>th</sup>-16<sup>th</sup> November. Heavy rainfall up to 180 mm was observed in ocean near Kilinochchi on 13<sup>th</sup> November and up to 160 mm in Jaffna, Kilinochchi and Mannar island on 15<sup>th</sup> November. Rainfall up to 100 mm was observed in Giriulla on 12<sup>th</sup> November. Every prediction model predict increase of rainfall during the next week. Below average sea surface temperature was observed around Sri Lanka

### Summary

#### Monitoring

**Weekly Monitoring:** During 10<sup>th</sup>- 16<sup>th</sup> November northern, north eastern and north western regions mostly received rainfall. On 10<sup>th</sup> November Jaffna and Ampara received rainfall up to 40 mm. On 11<sup>th</sup> November rainfall up to 60 mm was observed around Yala and Kumana. Rainfall up to 100 mm was observed around Giriulla and eastern region of Batticaloa on 12<sup>th</sup> November while Western, Central and Sabaragamuwa provinces also received rainfall up to 60 mm. On 13<sup>th</sup> November, ocean near Kilinochchi received rainfall up to 180 mm while Kilinochchi, Vavuniya, Trincomalee and Mannar received rainfall up to 140 mm. On 14<sup>th</sup> November, ocean near Batticaloa received rainfall up to 100 mm and entire country received rainfall up to 70 mm. On 15<sup>th</sup> November Jaffna, Kilinochchi and Mannar Island received rainfall up to 160 mm while north eastern region of the country received rainfall up to 70 mm. On 16<sup>th</sup> November only Negombo, ocean near Gampaha and Ampara received rainfall up to 30 mm.

**Monthly Monitoring:** In October 2015, almost entire country received above average rainfall while the ocean near northern and western provinces, southern region of Puttalam and eastern region of Matara received below average rainfall.

#### Predictions

**14 day prediction:** NOAA NCEP models predict relatively high rainfall in eastern region of the country compared to the rest of the country during 18<sup>th</sup> November – 24<sup>th</sup> November. Total rainfall above 135 mm is expected during the week in eastern region and total rainfall up to 115 mm is expected in northern and north central regions. Rest of the country is expected to receive rainfall up to 95 mm. These models predict the rainfall to increase during 25<sup>th</sup> November – 1<sup>st</sup> December and total rainfall above 135 mm is expected in eastern region, total rainfall up to 115 mm is expected in rest the country while southern and western regions shall receive total rainfall up to 95 mm.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model rainfall up to 125 mm is expected around Bogawantalawa on 20<sup>th</sup> November while Giriulla and Rambukkana shall receive rainfall up to 65 mm and rest of the country also shall receive slight amounts of rainfall. On 14<sup>th</sup> November, ocean near eastern region of the country shall receive rainfall up to 125 mm while Colombo and Chilaw shall receive rainfall up to 65 mm and the rest of the country also shall receive slight amounts of rainfall. IRI CFS models predict total rainfall up to 100 mm in northern and central regions of the country during 18<sup>th</sup> – 23<sup>rd</sup> November.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for November to January, 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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<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

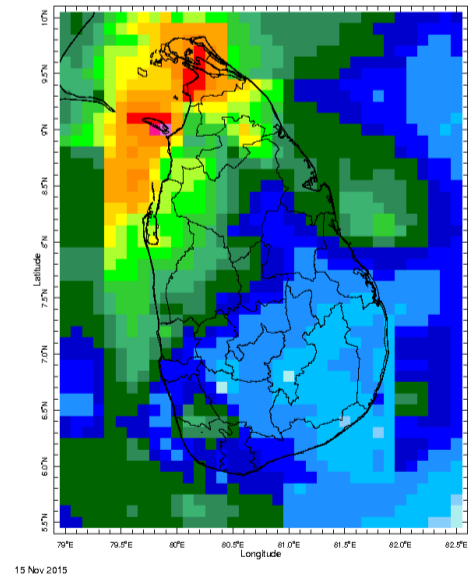
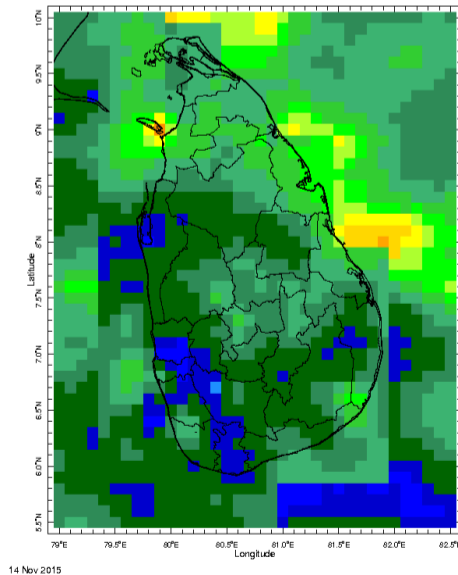
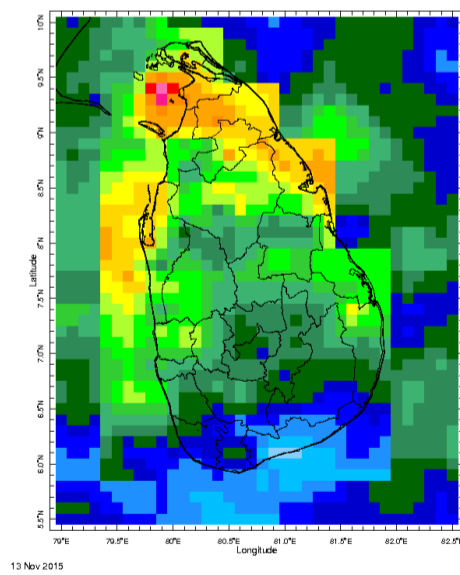
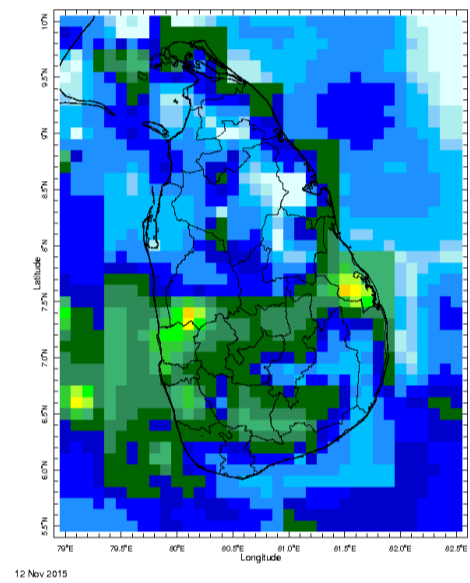
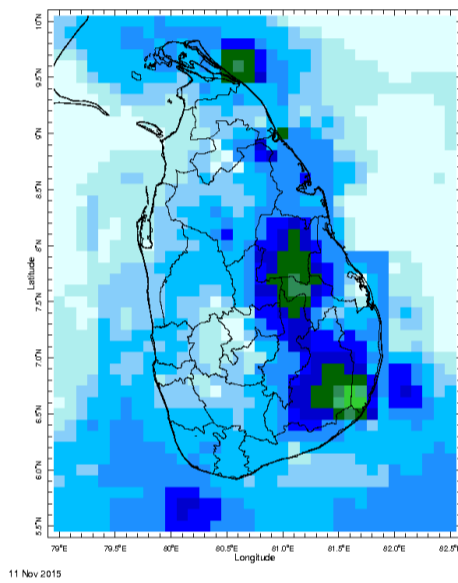
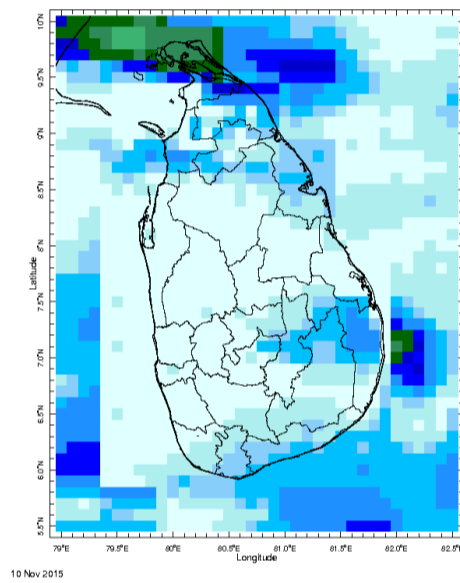
**Weekly Hydro- Meteorological Report for Sri Lanka**

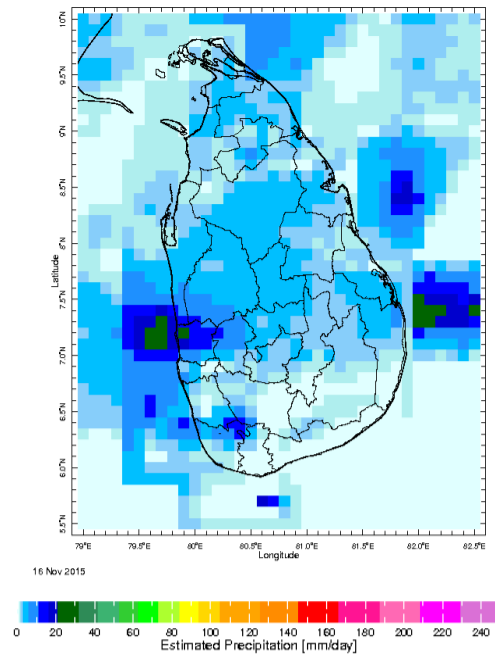
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**Daily Rainfall Monitoring**

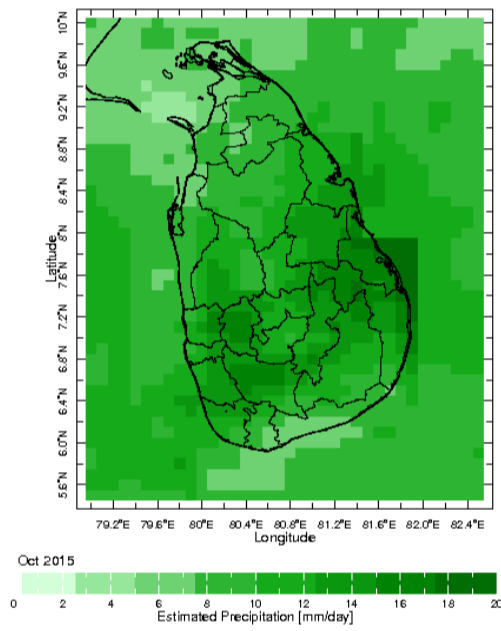
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



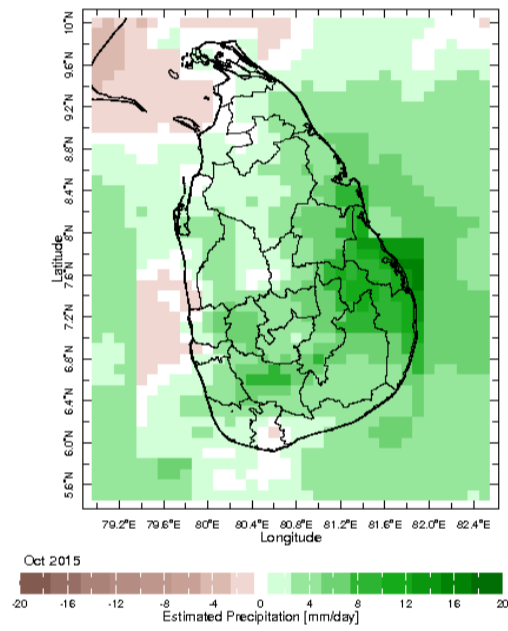


## Monthly Rainfall Monitoring

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

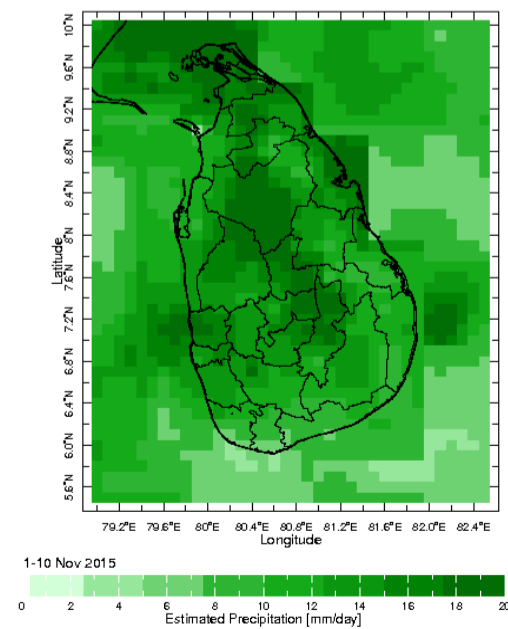
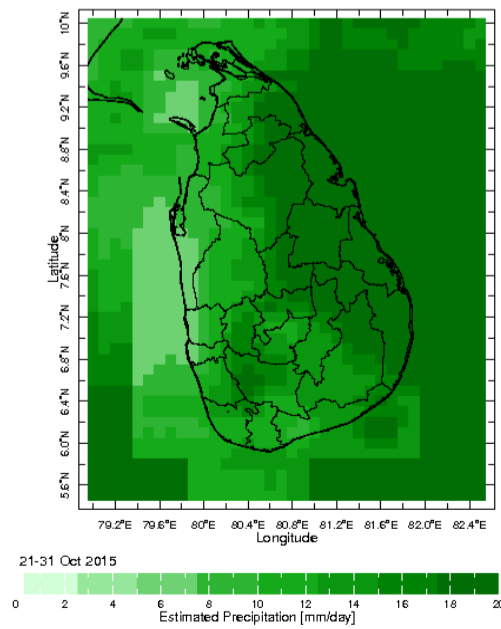


Monthly Average

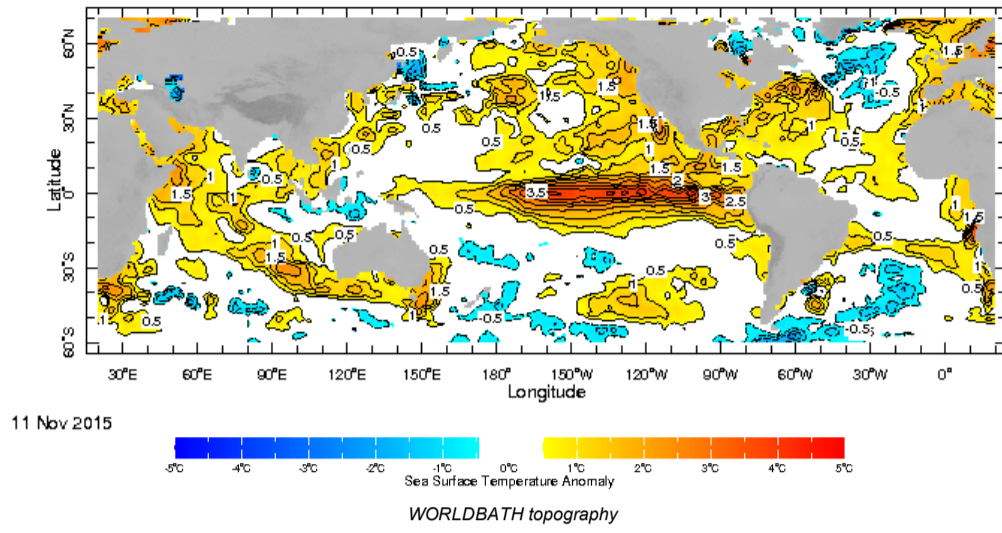


Monthly Anomaly

## Dekadal (10 Day) Satellite Derived Rainfall Estimates

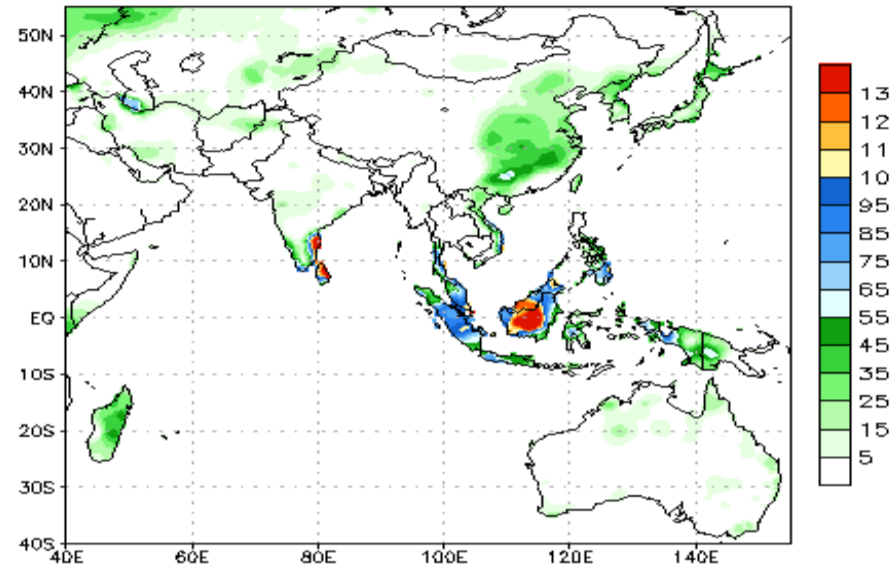


**Weekly Average SST Anomalies**

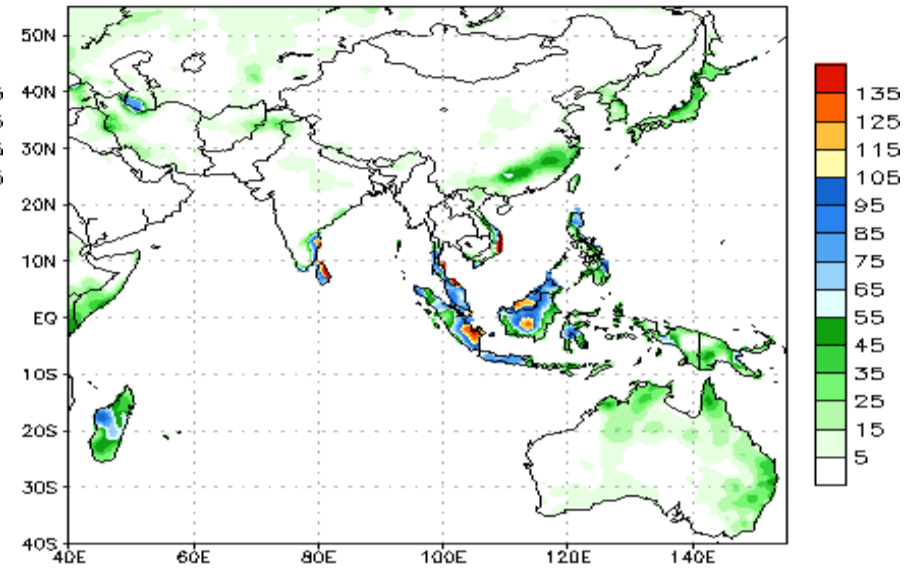


**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 18Nov2015  
18Nov2015–24Nov2015 Accumulation



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 18Nov2015  
25Nov2015–01Dec2015 Accumulation

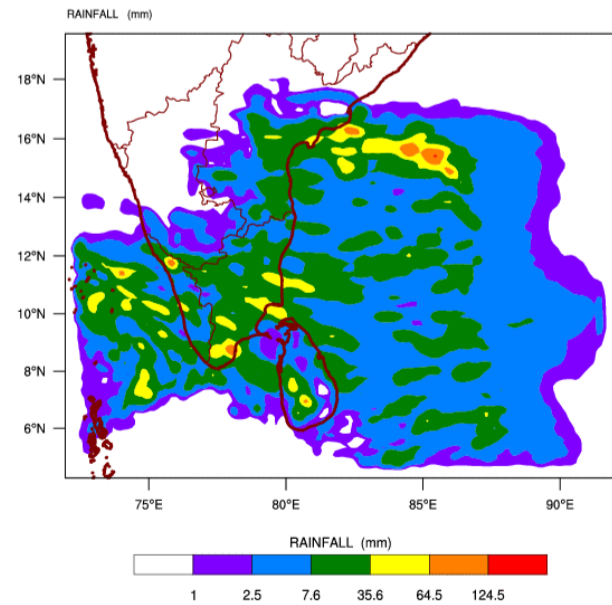


Bias correction based on last 30-day forecast error

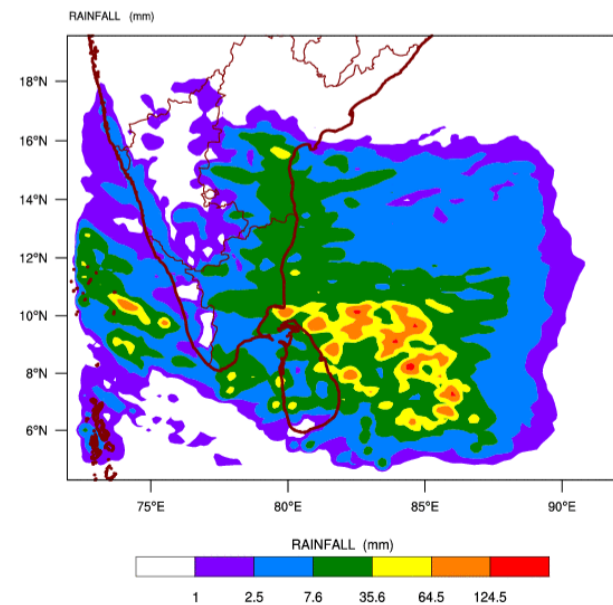
Bias correction based on last 30-day forecast error

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

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 18-11-2015 valid for 03 UTC of 20-11-2015

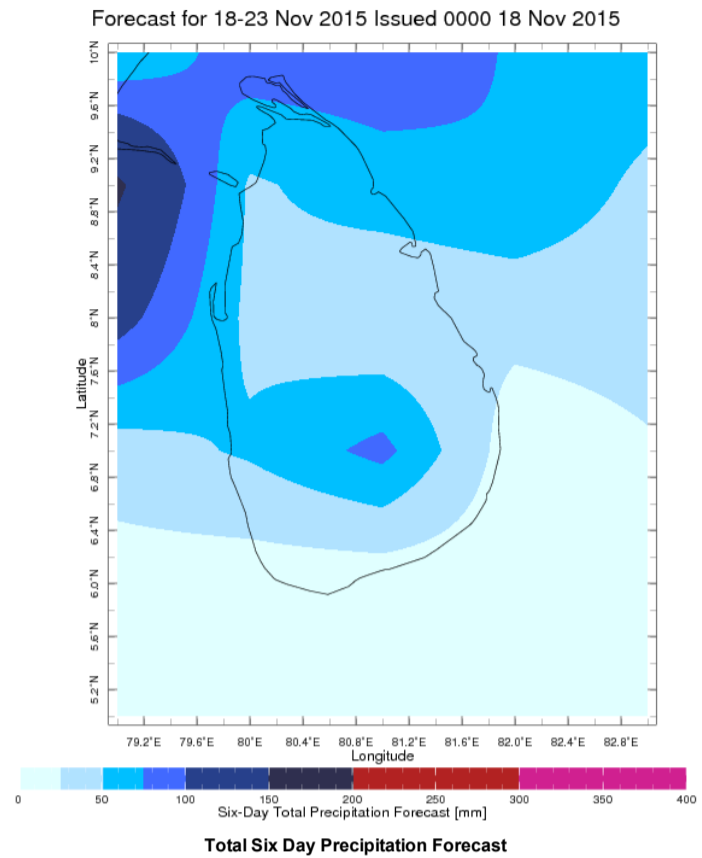
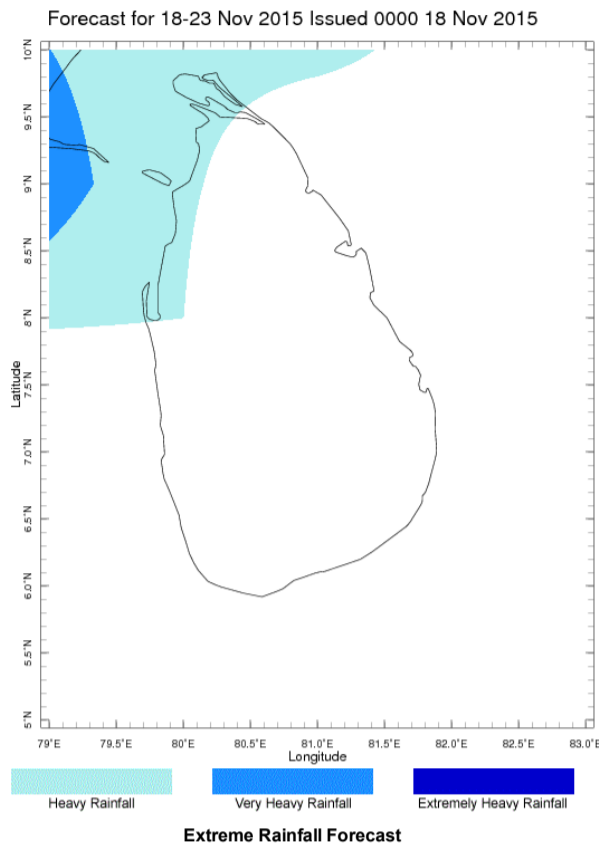


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 18-11-2015 valid for 03 UTC of 21-11-2015



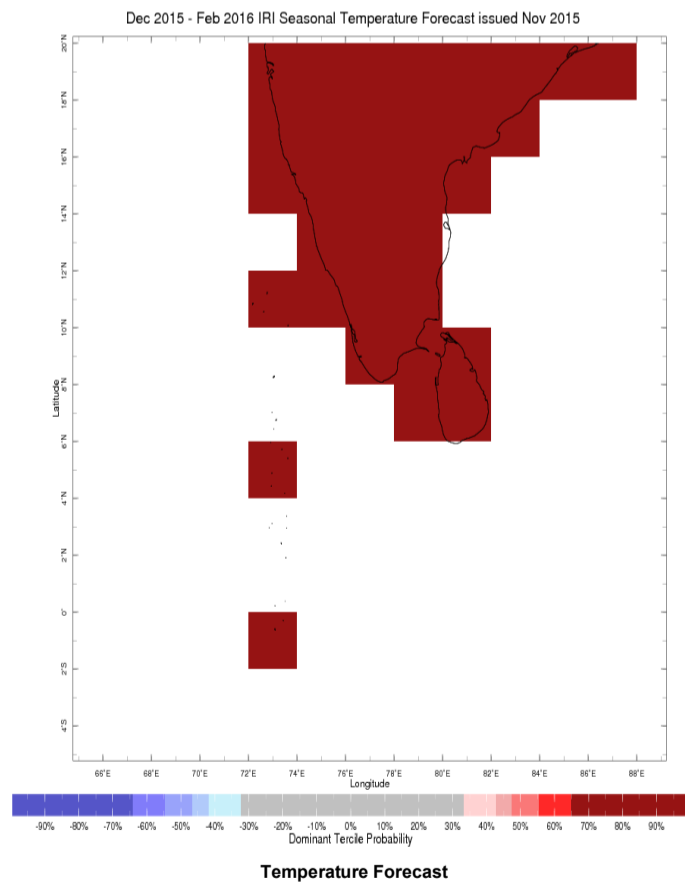
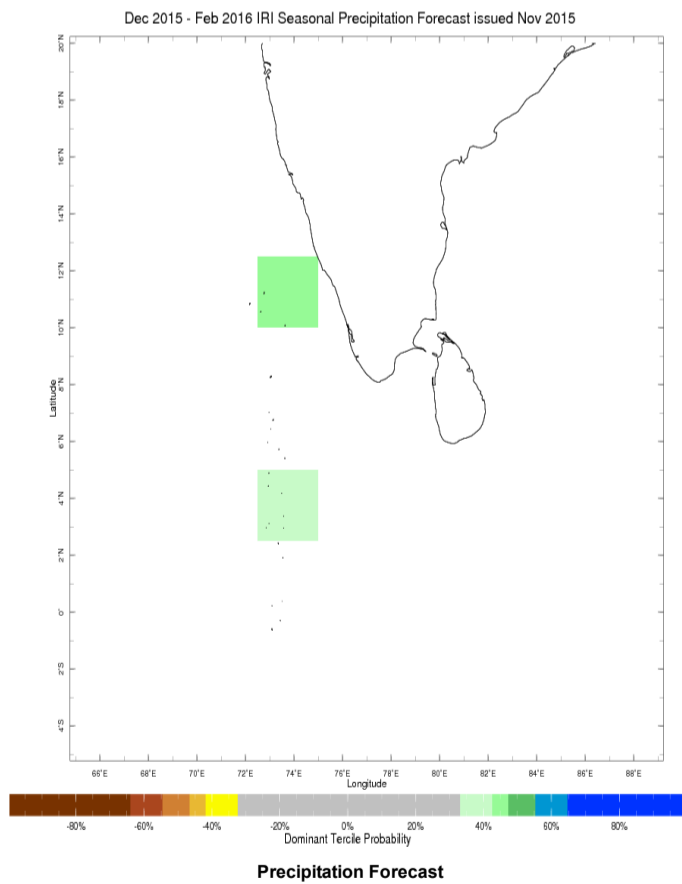
## Weekly Rainfall Forecast

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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