

## Experimental Climate Monitoring and Prediction

(Prepared for the Water Management Secretariat of the Mahaweli Authority)

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16 August 2012

### FECT BLOG

Past reports available at  
<http://fectsl.blogspot.com/>

and

<http://fectsl.wordpress.com/>

### FECT WEBSITE

<http://www.climate.lk>

and

<http://www.tropicalclimate.org/>

### ENSO Update

09 August 2012

Slightly more than 70% of the ENSO prediction models predict El Nino conditions developing around the August- October season, continuing through the rest of 2012. However, nearly 30% of the models still indicate persistence of ENSO- neutral conditions, No models indicate a re-emergence of La Nina conditions (IRI)

### Summary<sup>2</sup>

#### Monitoring

**Weekly Monitoring:** During the last week (09<sup>th</sup>- 14<sup>th</sup> August) rainfall ranged between 0- 140 mm. Light rainfall observed in South-Western region of the country during 9<sup>th</sup>-11<sup>th</sup> August and rainfall increased on the 12<sup>th</sup> for this region. Eastern parts received 10mm-40mm rainfall on the 13<sup>th</sup> August while Badulla District experienced high rainfall up to a maximum of about 140mm on the 14<sup>th</sup> August .

**Monthly Monitoring:** During July, southern half of the island experienced a below average rainfall with an increased below average particularly in the Western and South Western regions. It clearly reflects the deficit of the South West Monsoon rainfall up to now. The rest of the island experienced an above average rainfall with a higher intensity in the Trincomalee district while some parts of the Moneragala district also experienced an above average rainfall.

#### Predictions

**7 Day Prediction:** For the coming week an accumulated rainfall of 15 - 45 mm is predicted for the whole island with more rainfall for the South-western region.

**IMD WRF Model Forecast & IRI forecast:** WRF Model Predicts 1mm- 65 mm rainfall for the western, south-western and north-western regions of the country on the 17<sup>th</sup> of August. For the 18<sup>st</sup> of August, the Model predicts same amount of rainfall with a spreading to Central region of the island. NOAA models forecast 50-75mm of rainfall for Northern, North Central, Western and North Western regions of the island and 30-50 mm rainfall for the rest of the country.

**1 Month Prediction: Overall** rainfall shall decrease gradually till the 24<sup>th</sup> of August and then shall fluctuate till the 14<sup>th</sup> of September. Generally high rainfall shall not be expected. **Western Slopes:** Rainfall shall decrease rapidly till the 21<sup>st</sup> . No rainfall is predicted from 21<sup>st</sup>-23<sup>rd</sup> .Thenafter it shall increase rapidly for two days followed by rapid decrease with minor fluctuations till the 28<sup>th</sup> . It shall show a slow increasing trend with some fluctuations till the 24<sup>th</sup> August. **Eastern Slopes:** Rainfall shall fluctuate between 2mm-5 mm till the 14<sup>th</sup> September. **Northern:** A rapid decrease of rainfall shall be observed till the 19<sup>th</sup> . Thenafter rainfall shall fluctuate between 1mm- 3mm till 14<sup>th</sup> of September.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for September 2012 to November 2012, issued in July 2012, there is a 50%-60% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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- IMD WRF Model Forecast
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

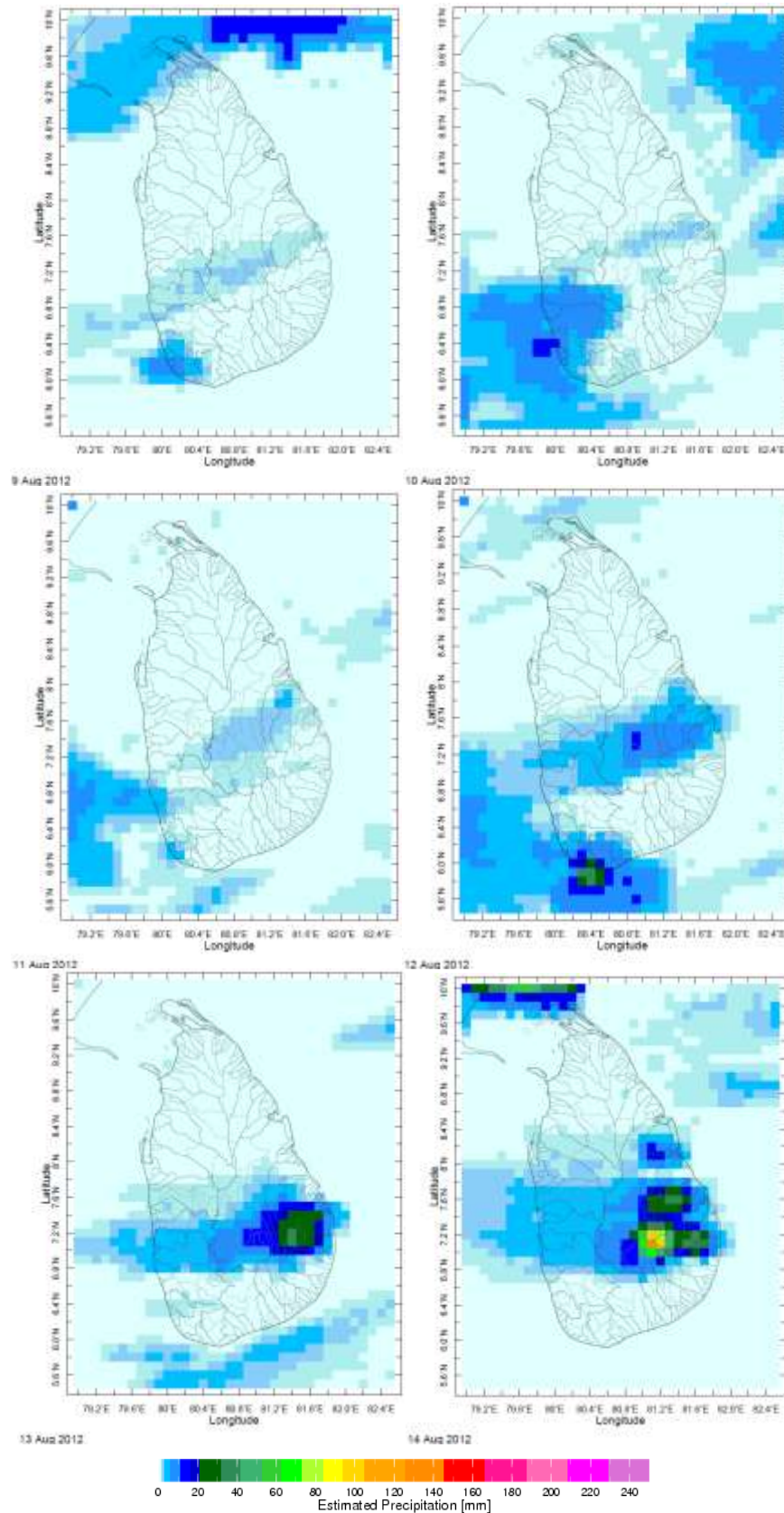
International Research Institute for Climate and Society.

<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

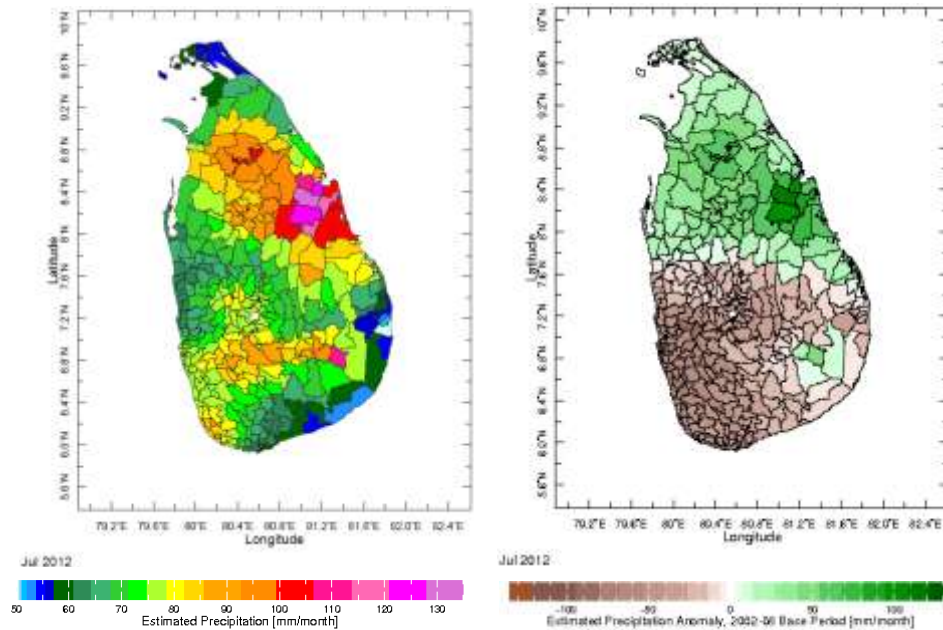
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

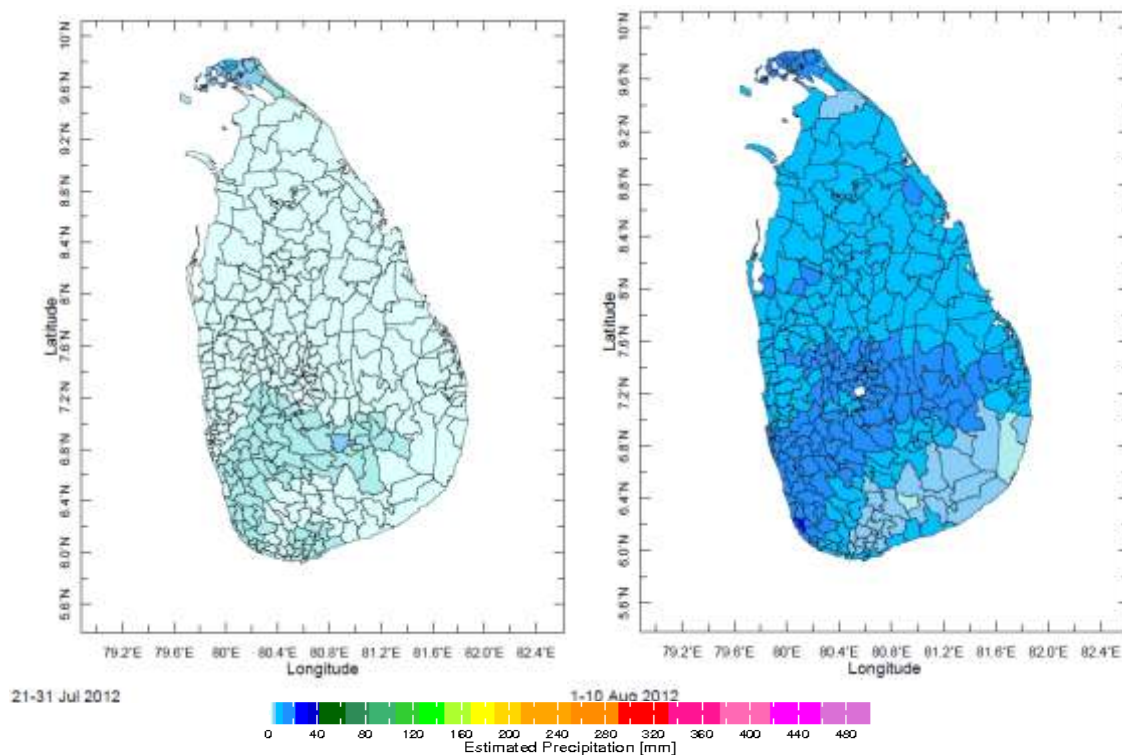
### a) Daily Satellite Derived Rainfall Estimate Maps: 9<sup>th</sup> Aug- 14<sup>th</sup> Aug, 2012 (Left-Right, Top-Bottom)



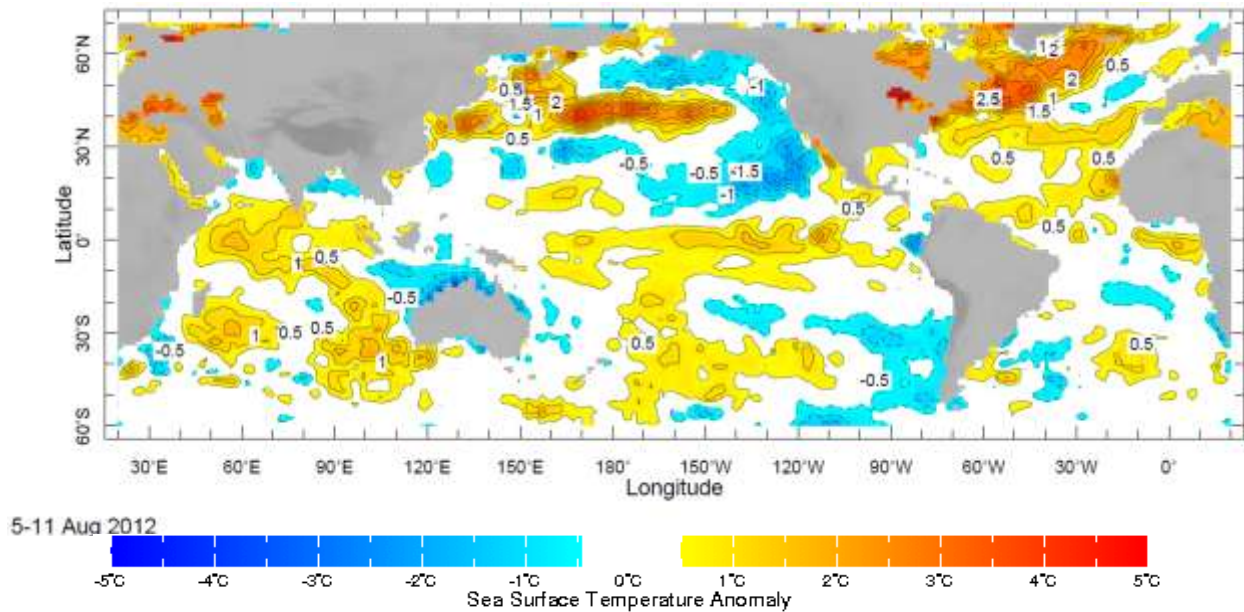
**b) Monthly Satellite Derived Rain fall Estimates for July 2012 (Total – Left and Anomaly -Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 July & , 1-10 August 2012)**



**d) Weekly Average SST Anomalies**

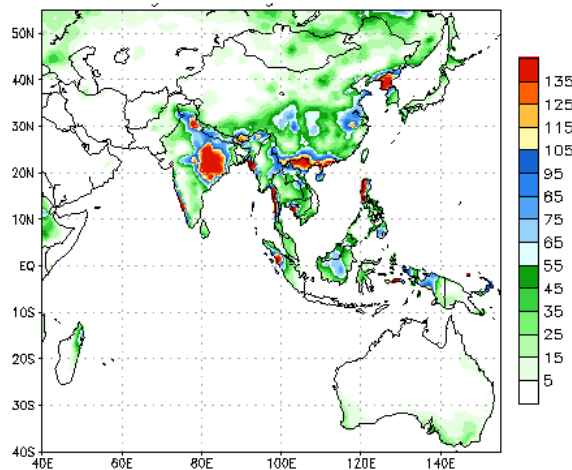


Weekly Average SST Anomalies ( $^{\circ}$ C), 5<sup>th</sup> -11<sup>th</sup> August, 2012

Data Source: NCEP Environmental monitoring center (Climatology 1971-2000)

**2. Predictions**

**a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.**



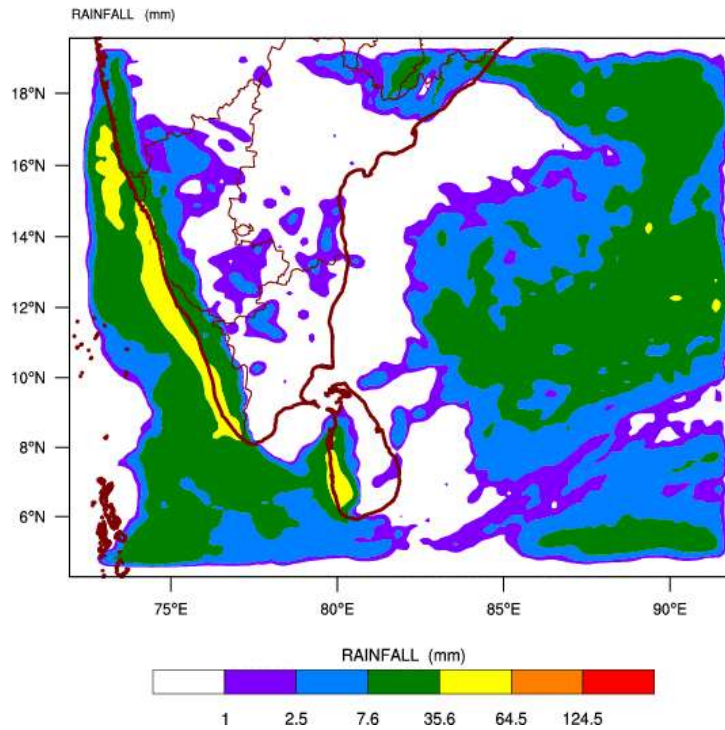
During next week, an accumulated rainfall of 15 mm - 45 mm is predicted for the whole island.

Source – NOAA Climate Prediction Center

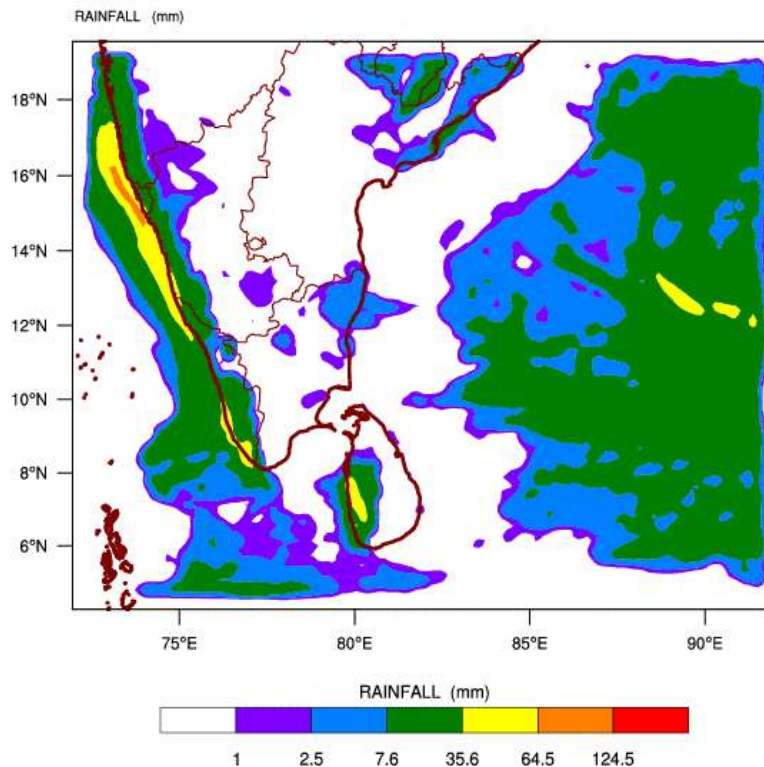
Map: Predicted accumulation of rainfall. (15<sup>th</sup> – 21<sup>st</sup> August, 2012 week)

**b) WRF Model Forecast (Regional Meteorological Center, Chennai, Indian Meteorological Department)**

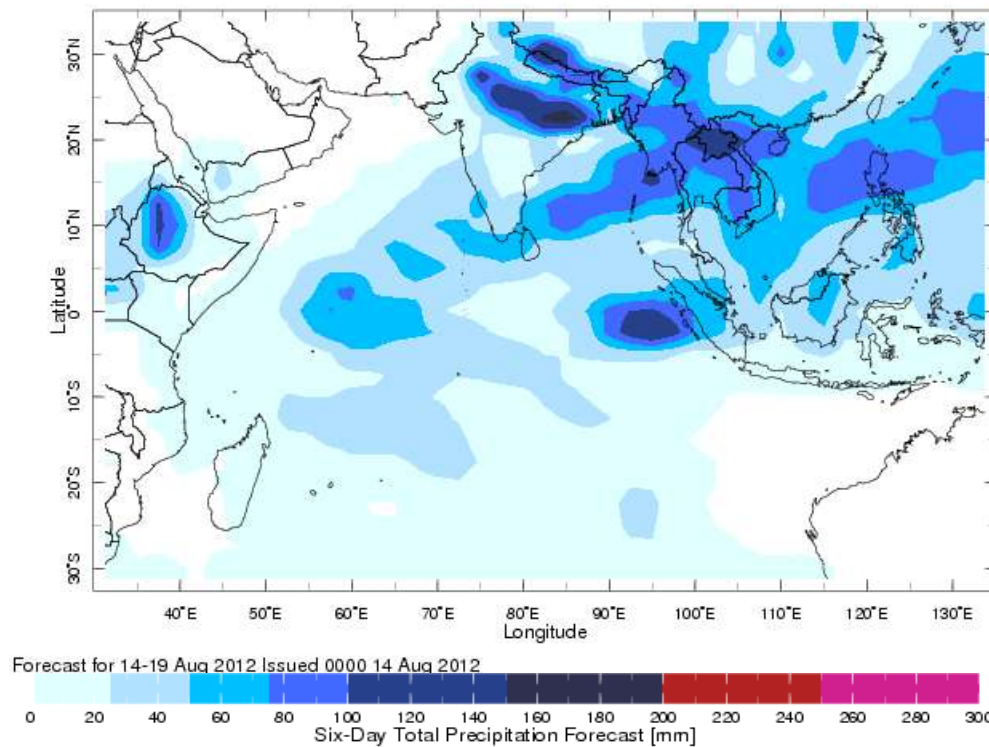
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 15-08-2012 valid for 03 UTC of 17-08-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 15-08-2012 valid for 03 UTC of 18-08-2012



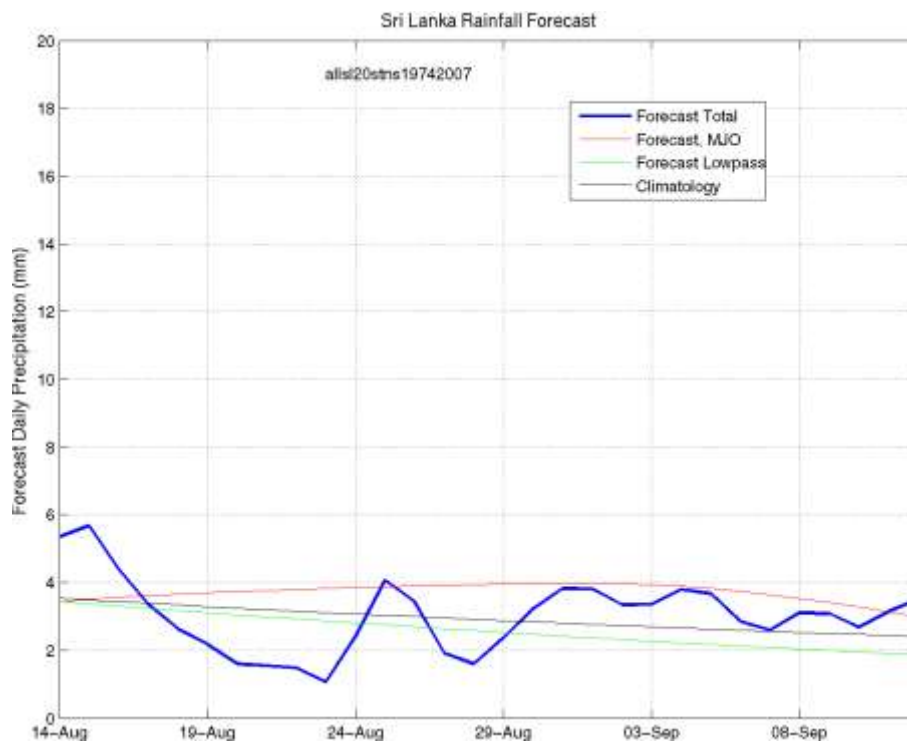
**c) Weekly Precipitation Forecast for 14-19 August 2012 (Precipitation Forecast in Context Map Tool, IRI)**



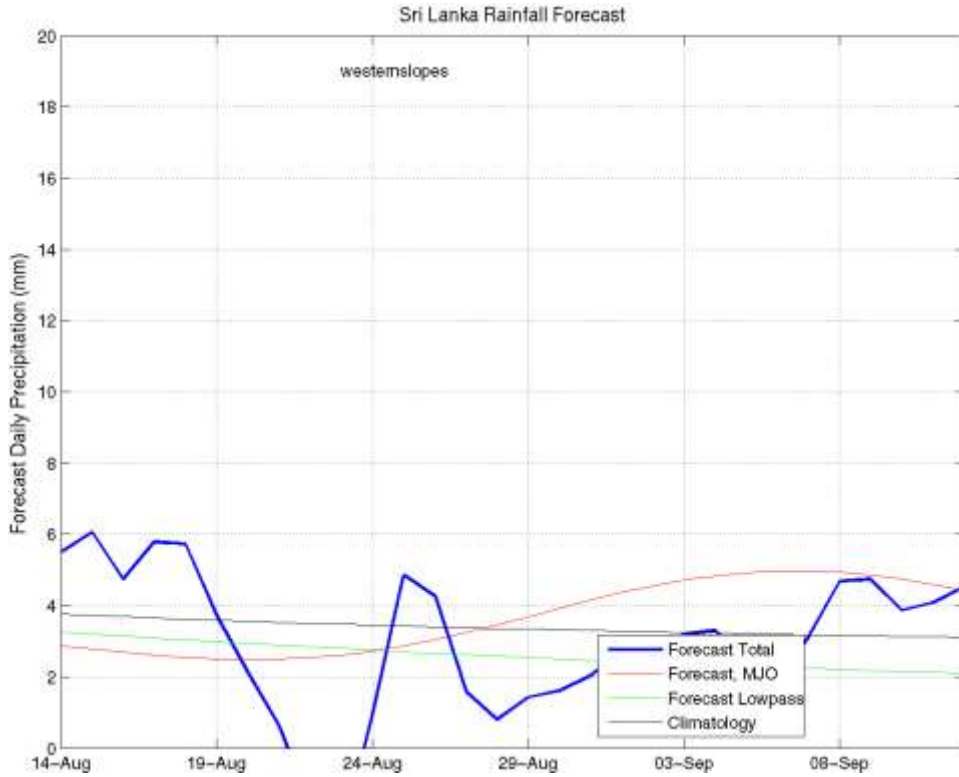
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 16<sup>th</sup> August, 2012

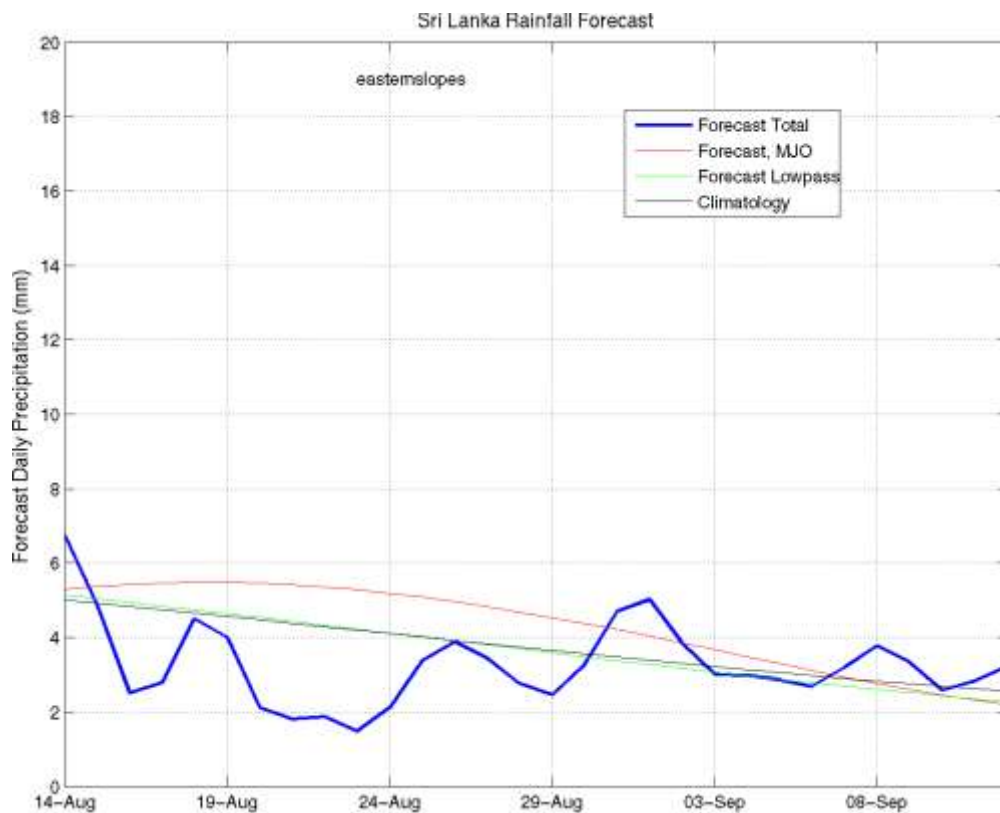
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



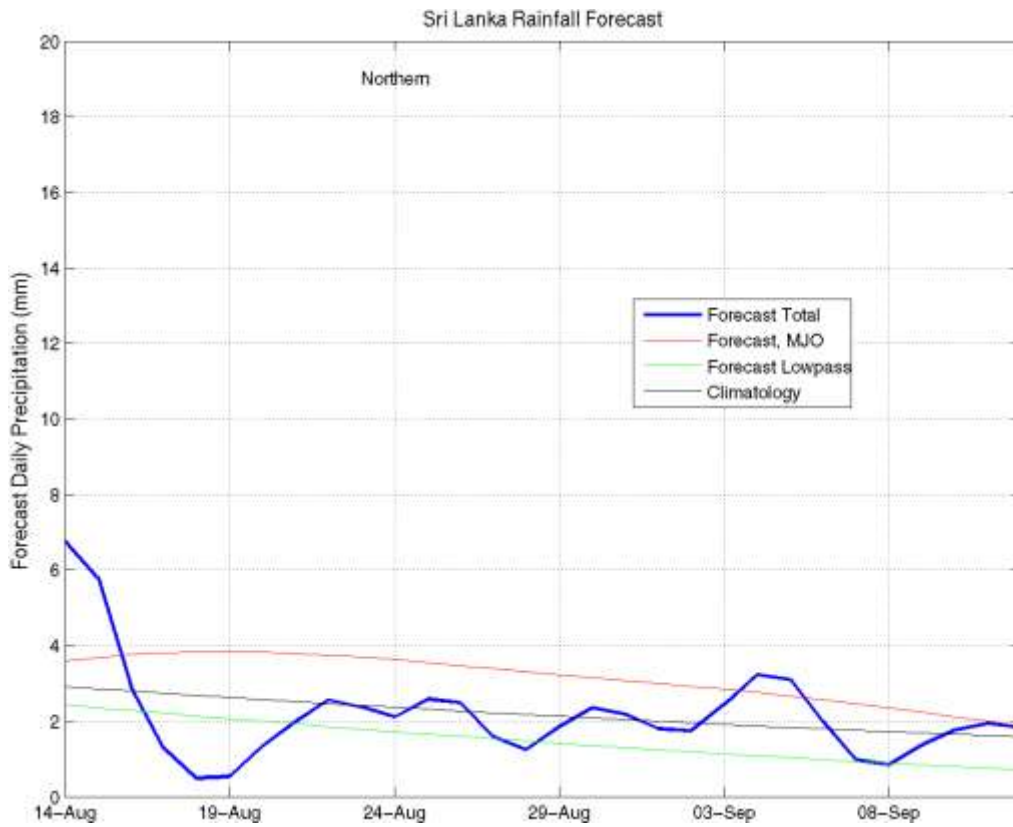
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



**Eastern Slopes (Rainfall Scale- from 0-20 mm/day)**



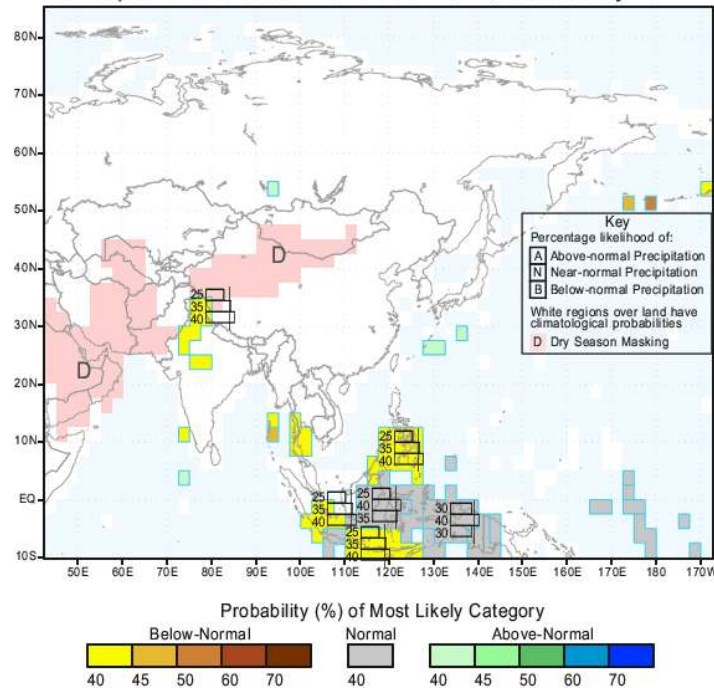
**Northern Region (Rainfall Scale- from 0-20 mm/day)**





*e) Seasonal Rainfall and Temperature Predictions from IRI*

IRI Multi-Model Probability Forecast for Precipitation  
for September-October-November 2012, Issued July 2012



IRI Multi-Model Probability Forecast for Temperature  
for September-October-November 2012, Issued July 2012

