

## 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/>

### PACIFIC SEAS STATE

#### December 20, 2012

Most of the ENSO prediction models predict natural ENSO conditions through the first half of 2013. During early December the observed SST conditions have been in the neutral range.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

During January 2013, warmer SST shall be over tropical Indian Ocean than the Bay of Bengal which shall aggravate unusual weather patterns.

### Highlights

#### Monitoring and Predictions:

Heavy rainfall shall diminish during 9<sup>th</sup>-15<sup>th</sup> January for the entire country. However, significant amount of rainfall shall be received for the southern 2/3<sup>rd</sup> of Sri Lanka during 8<sup>th</sup>-13<sup>th</sup> January. The monthly predictions point to an Extreme amount of rainfall for the entire country around 22<sup>nd</sup>-24<sup>th</sup>. Extreme rainfall shall persist from 22<sup>nd</sup> till end of January.

### Summary

#### Monitoring

**Weekly Monitoring:** From 4<sup>th</sup>-8<sup>th</sup> January 2013, rainfall ranged between 5-185 mm with the highest amount of precipitation observed in the Anuradhapura district on the 7<sup>th</sup> of January. On 7<sup>th</sup> January entire country received rainfall between 20-185 mm. During 4<sup>th</sup>-6<sup>th</sup> the South-eastern half and eastern regions received heavy rainfall. On 8<sup>th</sup> the Northern half of Sri Lanka received heavy rainfall.

#### Predictions

**7-day prediction:** During the period 9<sup>th</sup>-15<sup>th</sup> January 2013, Southern regions shall receive 5-25 mm of rainfall. For the same period, North and middle stretch of the island shall receive 25-55 mm of rainfall, and 55-75 mm of rainfall can be expected for the North-eastern regions.

**IMD WRF Model Forecast & IRI forecast:** For the 11<sup>th</sup> of January 2013, IMD WRF model predicts less than 65 mm of rainfall for Batticaloa and Ampara districts. Rainfall shall spread towards the westward direction with a decreasing trend. For the same day the model predicts 8-36 mm of rainfall for Matara, Galle and Kalutara districts. The stretch which combines Monaragala, Badulla and Ratnapura districts and, Gampaha Colombo and Kegalle districts shall receive less than 1 mm of rainfall. On 12<sup>th</sup> of January 2013, IMD WRF model predicts 8-36 mm of rainfall for Galle, Batticaloa and Ampara districts. Except for South-western districts, Galle, Matara, Eastern and South-eastern regions, entire Sri Lanka shall receive less than 1 mm of rainfall. NOAA models forecast heavy rainfall for the Southern 2/3<sup>rd</sup> of the island and very heavy rainfall for South-eastern regions of the island from 8-13<sup>th</sup> January 2013.

**30 Days Prediction: Overall-** Extreme rainfall is expected for the entire country around 22<sup>nd</sup>-24<sup>th</sup>. More or less heavy rainfall shall persist from 22<sup>nd</sup> till end of January. **Western Slopes-** When compared to the rest of the regions, western slopes shall receive higher amount of rainfall. During the month of January, extreme daily rainfall of 17 mm and 15 mm are expected around the 22<sup>nd</sup>-24<sup>th</sup> and end of January. **Western Coast-** Same pattern shall exist for the entire country. **Eastern slopes-** Comparative amount of daily rainfall (6 mm) shall be received during the period 22<sup>nd</sup>-25<sup>th</sup>. **Eastern Coast-** Extreme amount of rainfall shall be received around 15<sup>th</sup>-16<sup>th</sup> and 22<sup>nd</sup>-24<sup>th</sup> and end of January. **Northern region-** Extreme rainfall of 5 mm/day shall persist during 22<sup>nd</sup>-30<sup>th</sup>. **Southern region -** Extreme rainfall shall be received around 21<sup>st</sup>-24<sup>th</sup>.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for January 2013 to March 2013, issued in December 2012, there is a 60%-70% probability for temperature to be above normal in the country while the rainfall is to be climatological.

### Inside this Issue

#### 1. Monitoring

- Daily Satellite Derived Rain fall Estimates
- Weekly Average SST Anomalies

#### 2. Predictions

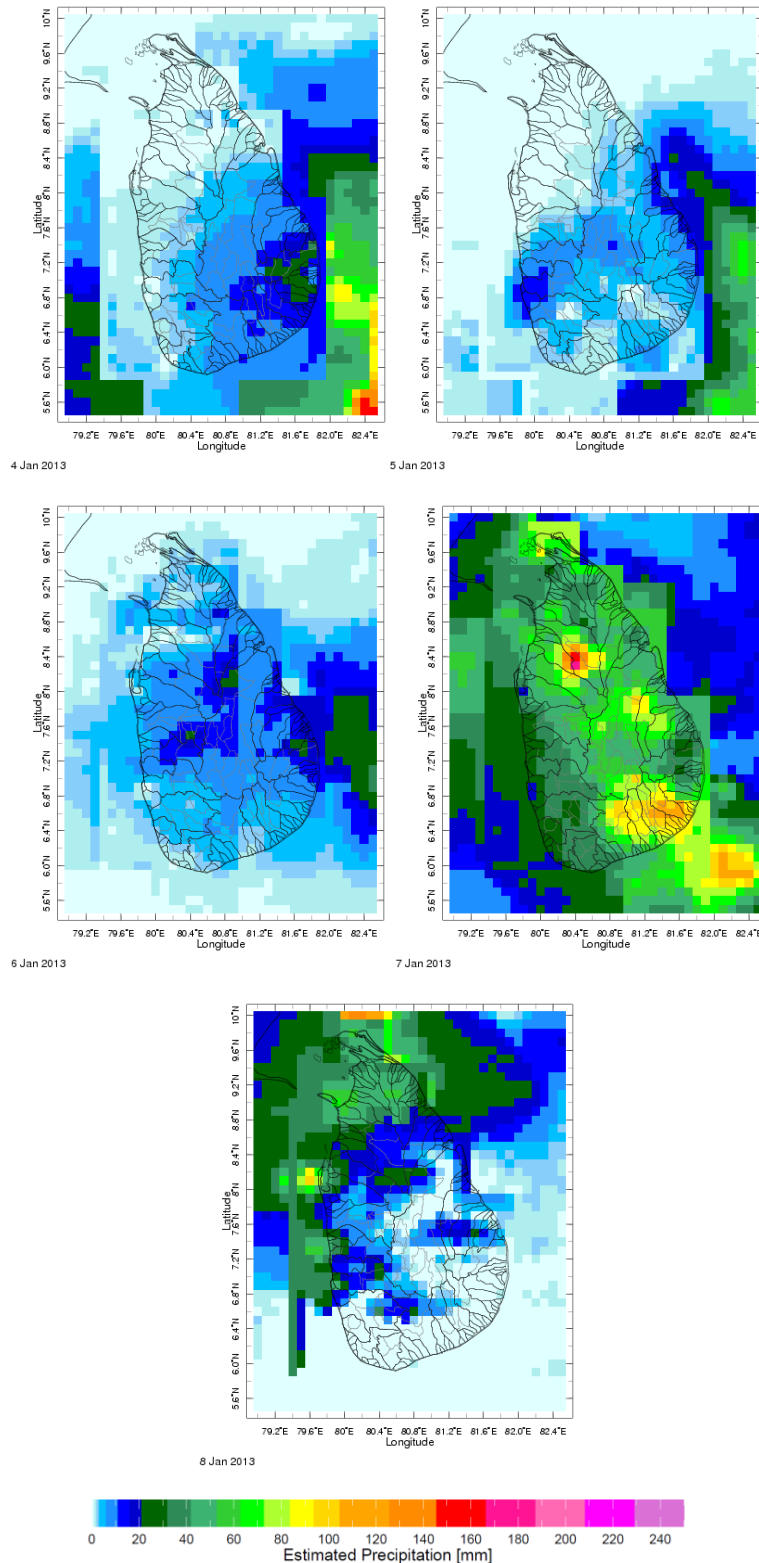
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

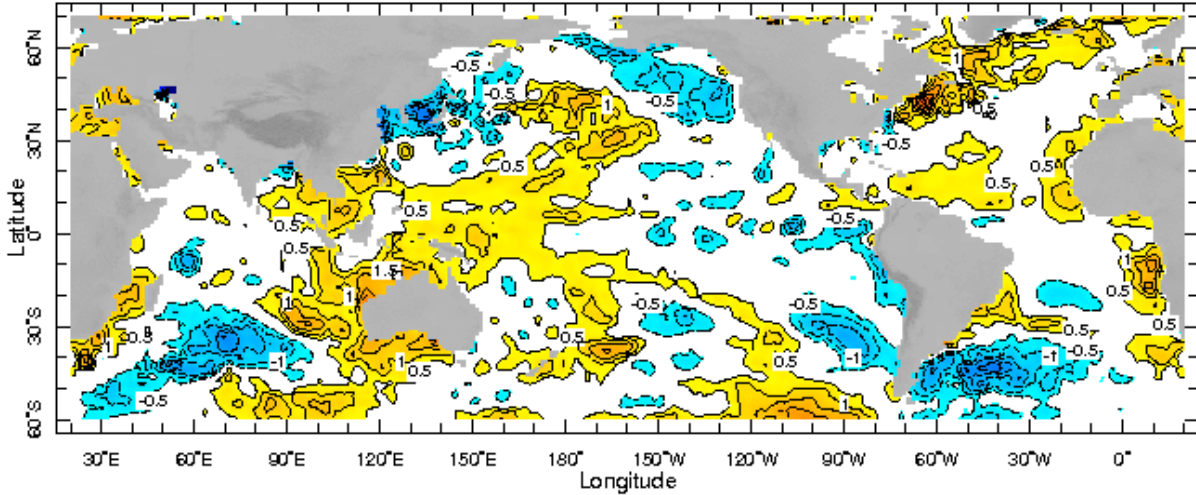
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

### a) Daily Satellite Derived Rainfall Estimate Maps: 4<sup>th</sup>-8<sup>th</sup> January 2013 (Left-Right, Top-Bottom)



**b) Weekly Average SST Anomalies**



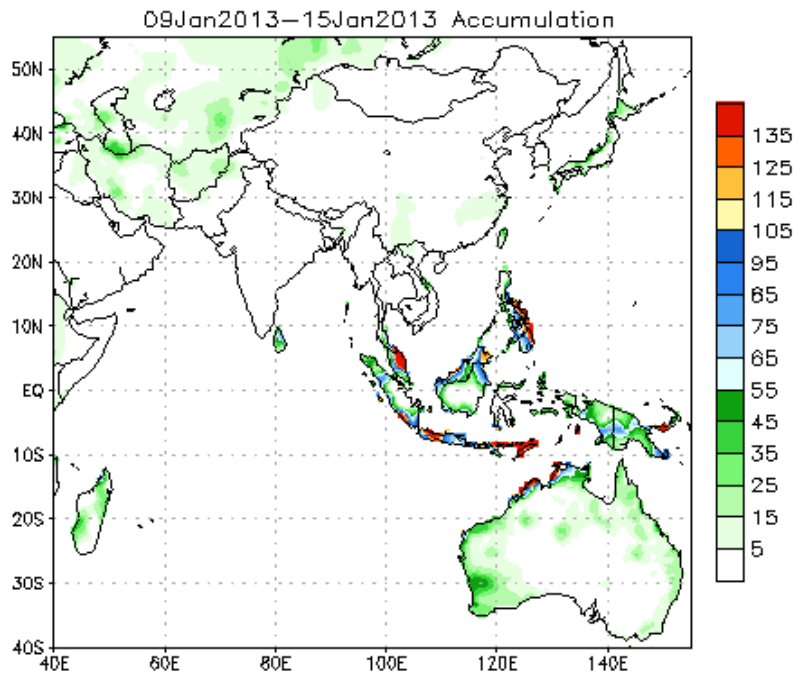
30 Dec 2012 - 5 Jan 2013

Weekly Average SST Anomalies ( $^{\circ}$ C), 30<sup>th</sup> December, 2012-5<sup>th</sup> January, 2013

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

**2. Predictions**

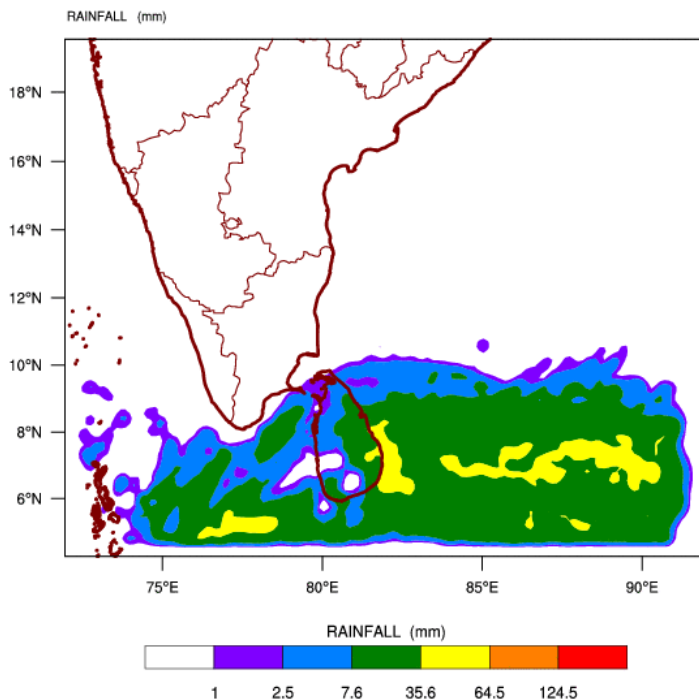
**a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.**



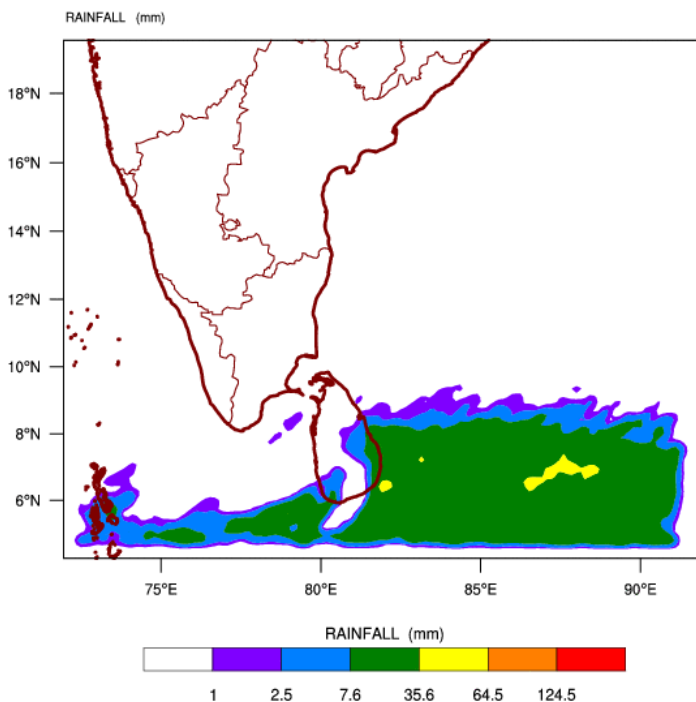
Source – NOAA Climate Prediction Center

**b) WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)**

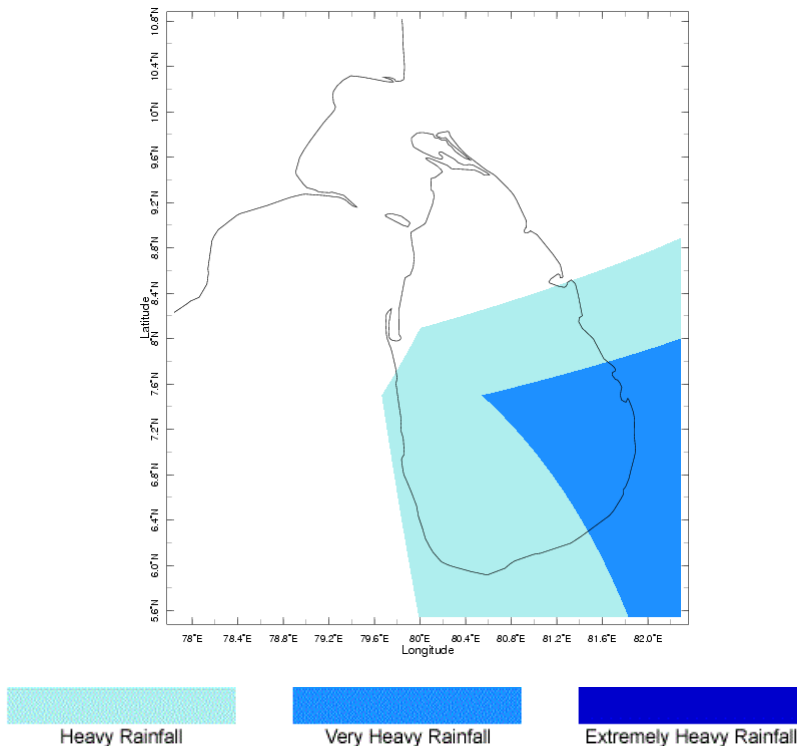
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 09-01-2013 valid for 03 UTC of 11-01-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 09-01-2013 valid for 03 UTC of 12-01-2013



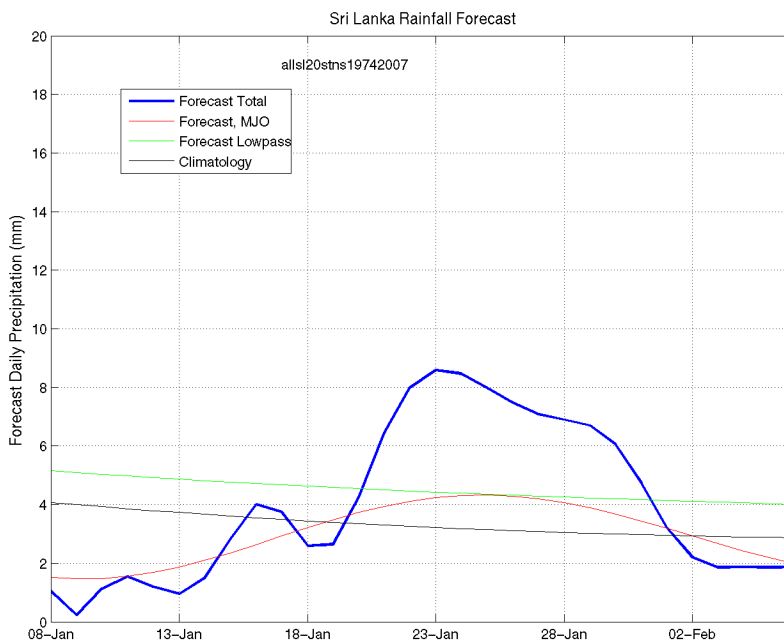
**c) Weekly Precipitation Forecast for 8<sup>th</sup>-13<sup>th</sup> January 2013 (Precipitation Forecast in Context Map Tool, IRI)**



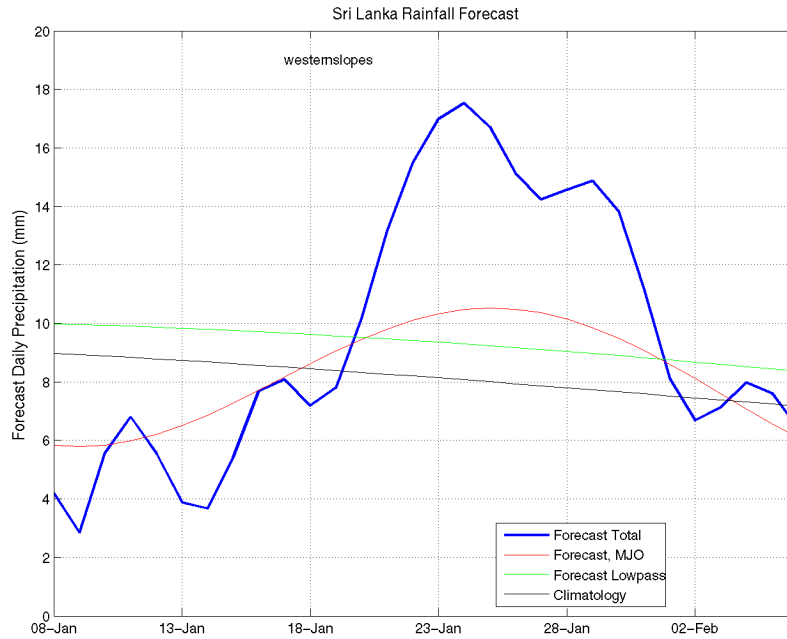
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 10<sup>th</sup> January, 2013

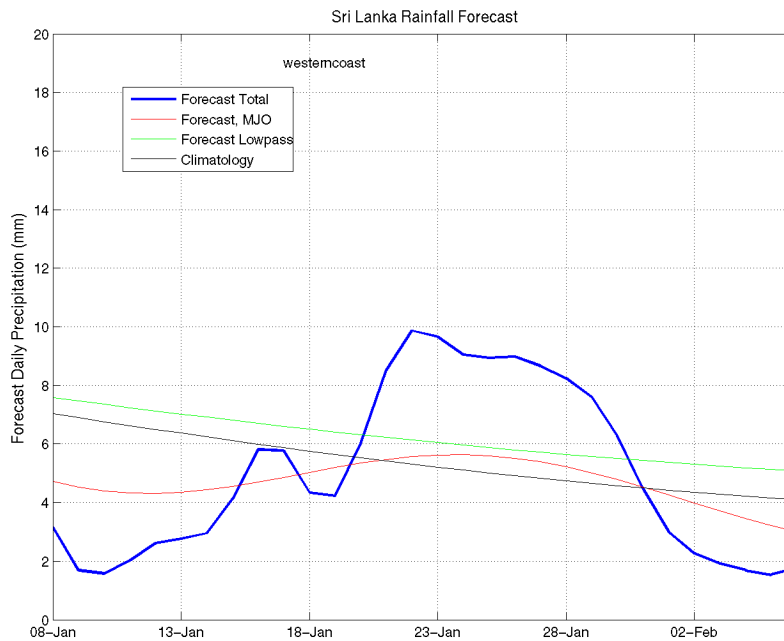
**All Sri Lanka (Rainfall Scale from 0-20mm/day)**



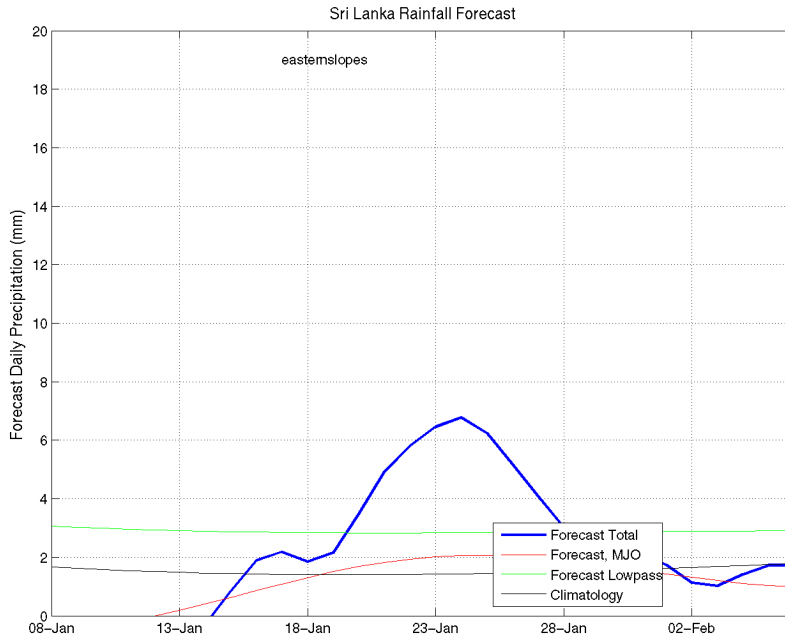
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



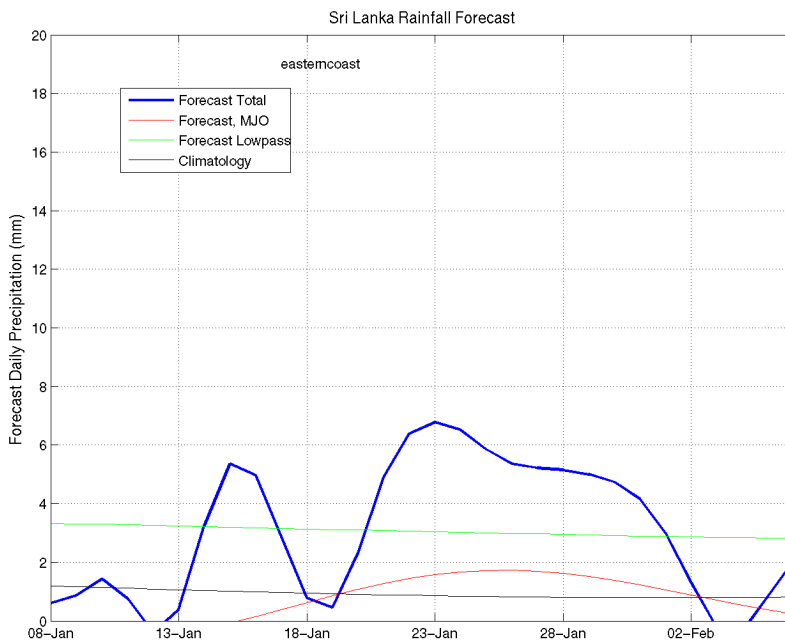
**Western Coast (Rainfall Scale from 0-20 mm/day)**



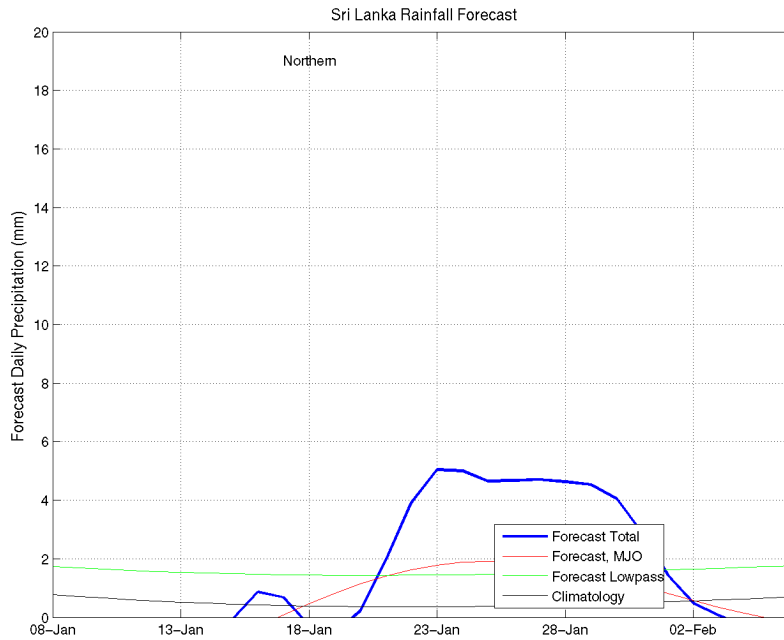
**Eastern Slopes (Rainfall Scale- from 0-20 mm/day)**



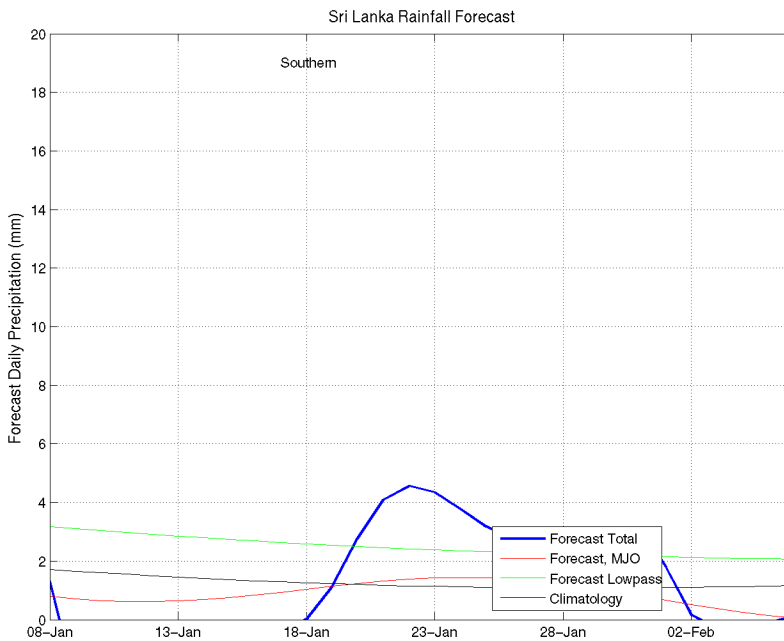
**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**



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



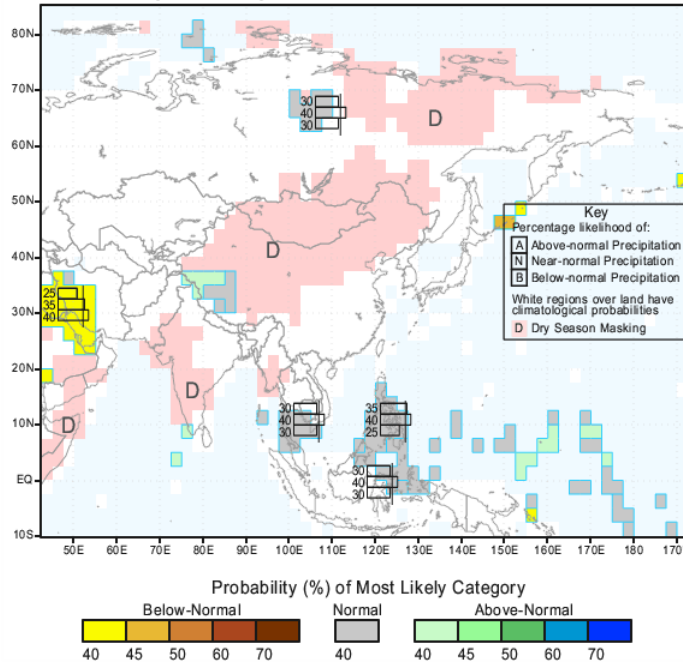
**Southern Region (Rainfall Scale- from 0-20 mm/day)**





*e) Seasonal Rainfall and Temperature Predictions from IRI*

IRI Multi-Model Probability Forecast for Precipitation  
for January-February-March 2013, Issued December 2012



IRI Multi-Model Probability Forecast for Temperature  
for January-February-March 2013, Issued December 2012

