

## 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/>

### March 21, 2013 PACIFIC SEAS STATE

During January through mid-March the observed ENSO conditions have leaned towards La-Nina, but remained in the neutral range. Most of the ENSO prediction models call for neutral ENSO conditions through northern summer 2013, but some statistical models call for weak La Nina while some dynamical models call for warming and possible weak El Nino.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

The Indian Ocean around Sri Lanka particular to the South continues to have a warm anomaly while SST increases further to the South.

### Highlights

#### Monitoring and Predictions:

Heavy rainfall was observed throughout the country in spells of 2 to 3 days in the past week. No extreme rainfall events were observed in the past week nor predicted for the next couple of weeks. The Sea Surface Temperature around Sri Lanka continues to have a positive anomaly.

#### Summary

#### Monitoring

**Weekly Monitoring:** During 20<sup>th</sup> – 27<sup>th</sup> March period south western regions of the country received rainfall up to 30 mm while the rest of the country was dry. On the 23<sup>rd</sup>, the eastern side of the country received rainfall up to 30 mm while the North West and the West of the island received very less amounts of rainfall. On the next day rainfall shifted towards north western regions of the country while heavy rainfall was observed in the sea further west of Kalmunai area. Rainfall dwindled in the next two days with rainfall up to 30 mm was observed in western and south western regions on the 25<sup>th</sup> and south eastern region on the 26<sup>th</sup>.

#### Predictions

**7-day prediction:** During 27<sup>th</sup> March- 1<sup>st</sup> April up to 25 mm rainfall is predicted in south western and north eastern regions of the country.

**IMD WRF Model Forecast & IRI forecast:** The whole country save for the coastal areas in the east of the country shall receive rainfall up to 35 mm on the 29<sup>th</sup> of March with the exception of regions around Ratnapura which shall receive rainfall up to 65 mm. Rainfall shall diminish on the next day. The whole country except for the Northern, North Western, and Western are expected to have rainfall up to 35 mm. NOAA model predicts rainfall up to 50 mm during the period 27<sup>th</sup> March- 1<sup>st</sup> April 2013.

**30 Days Prediction: Overall-** No unusually high rainfall events are predicted within the 30 day period starting from 26<sup>th</sup> March 2013. *Western Slopes* – Maximum rainfall is predicted around 27<sup>th</sup> March and it shall decrease gradually until the 15 April. Thereafter an increasing trend in the rainfall is expected. *Western Coast* –Rainfall shall more or less be constant throughout the 30 day period with fluctuations. *Eastern slopes* –Rainfall shall decrease until 10<sup>th</sup> of April and shall once again increase after 13<sup>th</sup>. *Eastern Coast* –Very less amount of rainfall is expected until 20<sup>th</sup> of April and no rainfall is expected thereafter. *Northern region-* Rainfall shall fluctuate around 2 mm. *Southern Region-* Very less amount of rainfall expected.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on March 2013; for April 2013 to June 2013, there is a 50- 60% 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

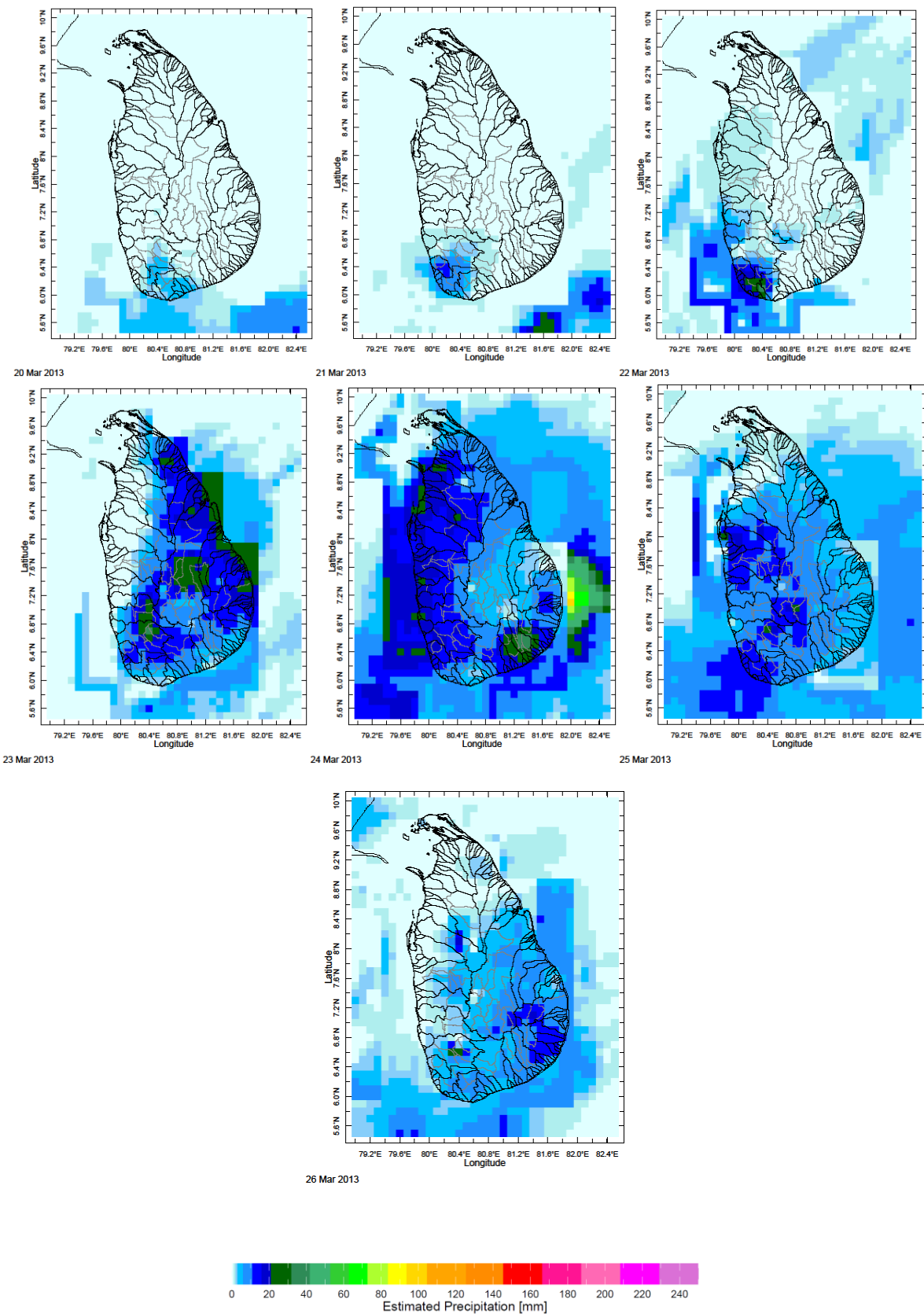
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

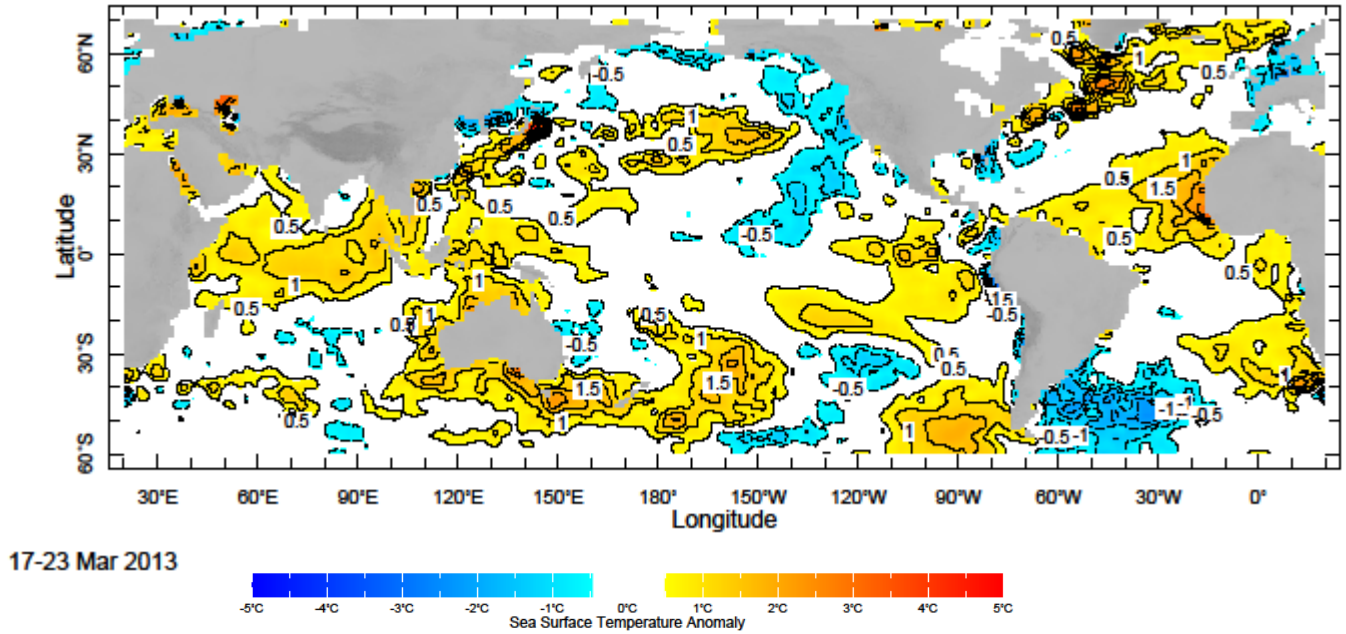
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

### a) Daily Satellite Derived Rainfall Estimate Maps: 20<sup>th</sup>-26<sup>th</sup> March 2013 (Left-Right, Top-Bottom)



**b) Weekly Average SST Anomalies**



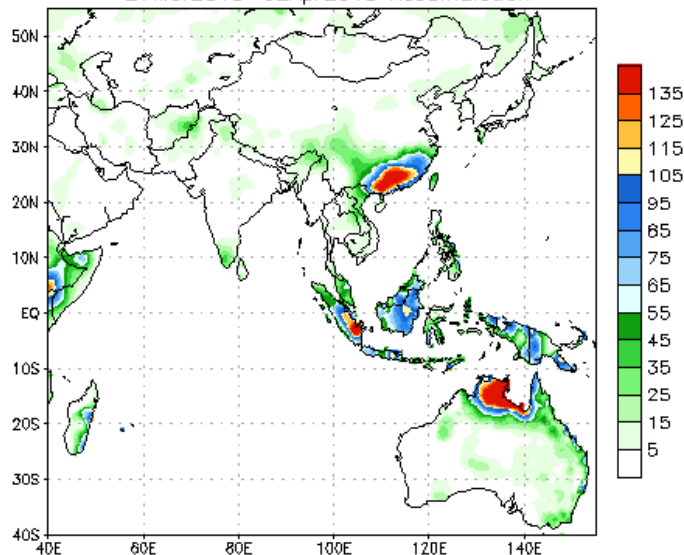
Weekly Average SST Anomalies ( $^{\circ}$ C), 17<sup>th</sup> -23<sup>rd</sup> March, 2013

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

**2. Predictions**

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

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 27Mar2013  
27Mar2013-02Apr2013 Accumulation

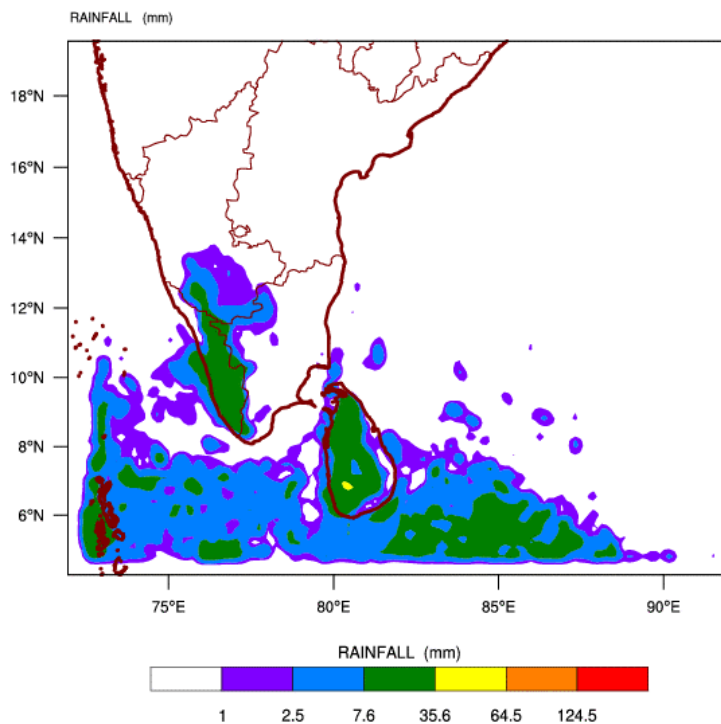


Bias correction based on last 30-day forecast error

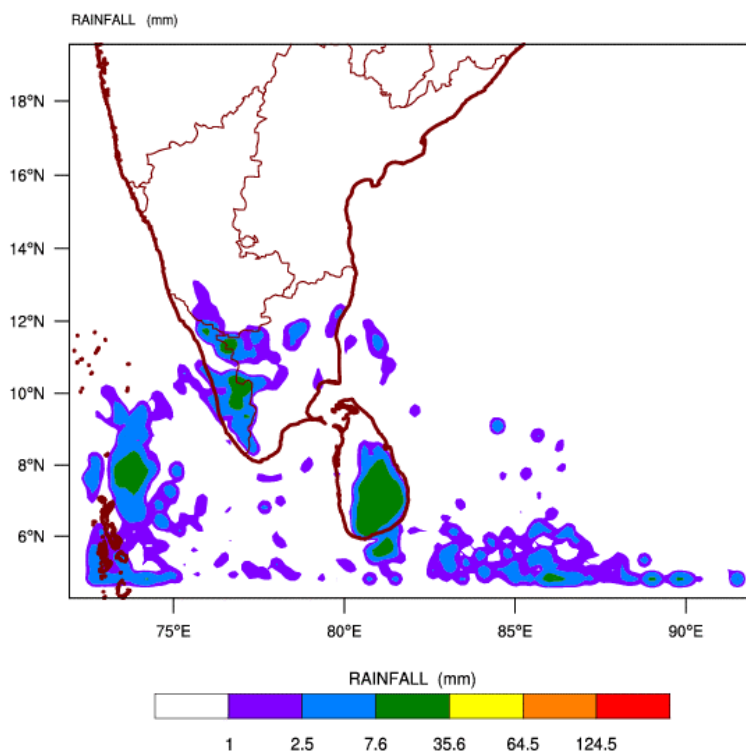
Source – NOAA Climate Prediction Center

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

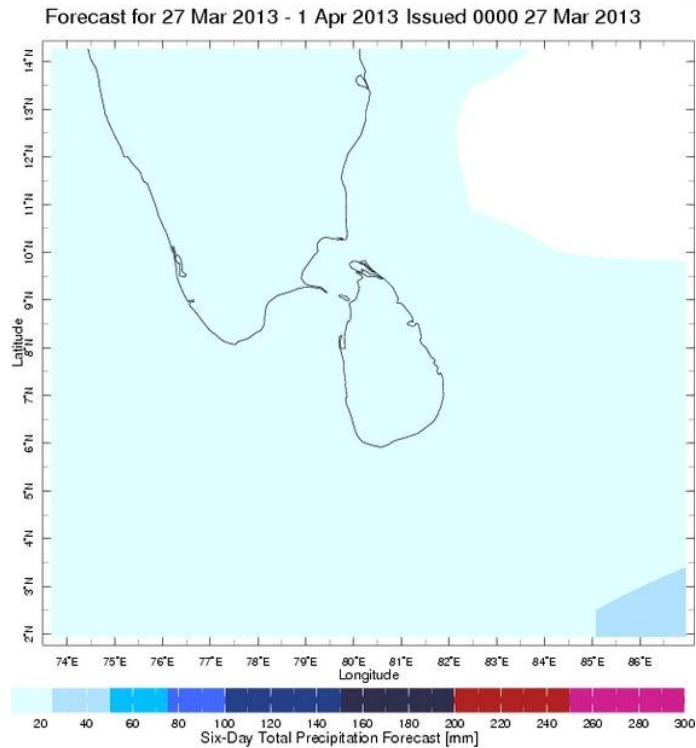
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 27-03-2013 valid for 03 UTC of 29-03-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 27-03-2013 valid for 03 UTC of 30-03-2013



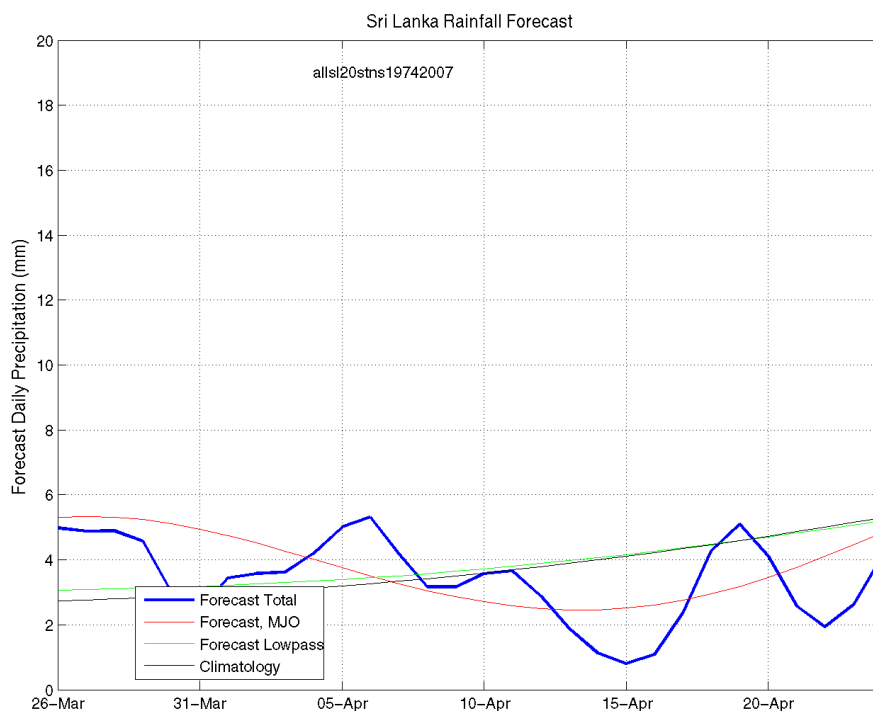
**c) Weekly Precipitation Forecast for 27<sup>th</sup> March - 1<sup>st</sup> April 2013 (Precipitation Forecast in Context Map Tool, IRI)**



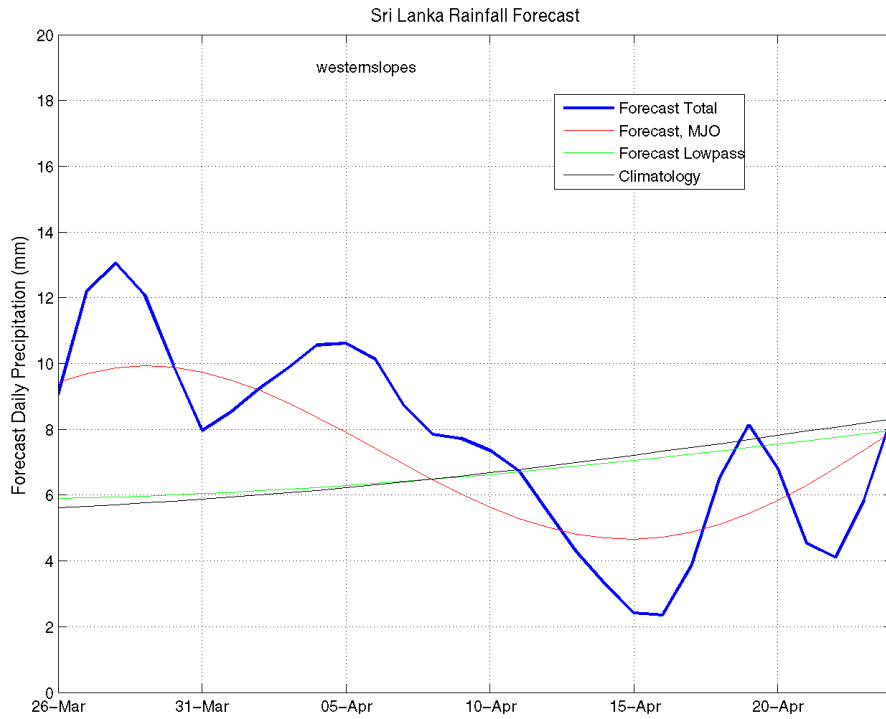
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 28<sup>th</sup> March, 2013

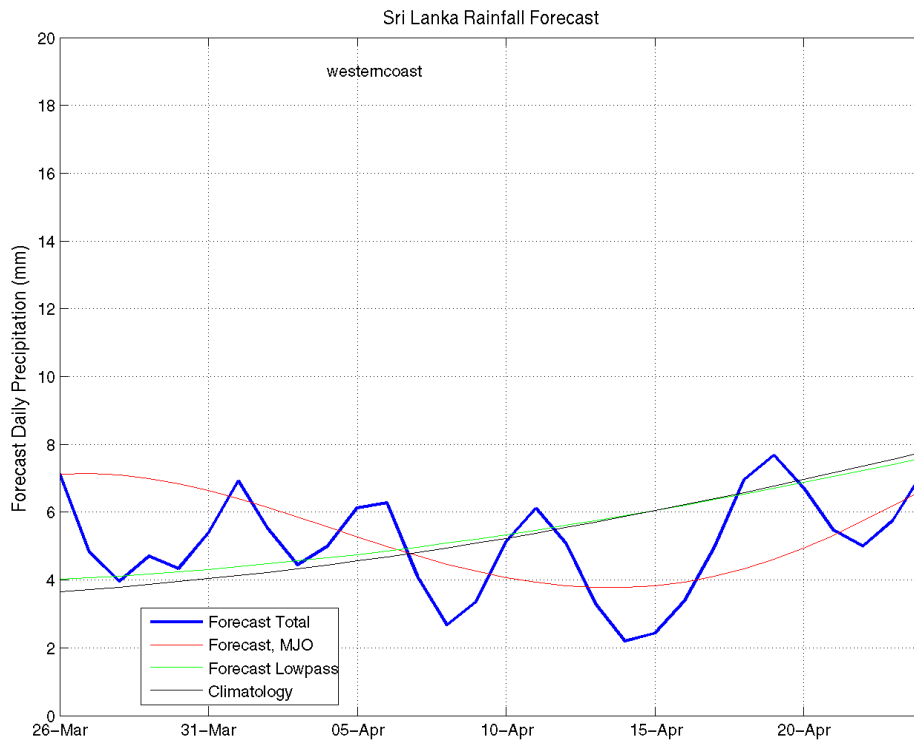
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



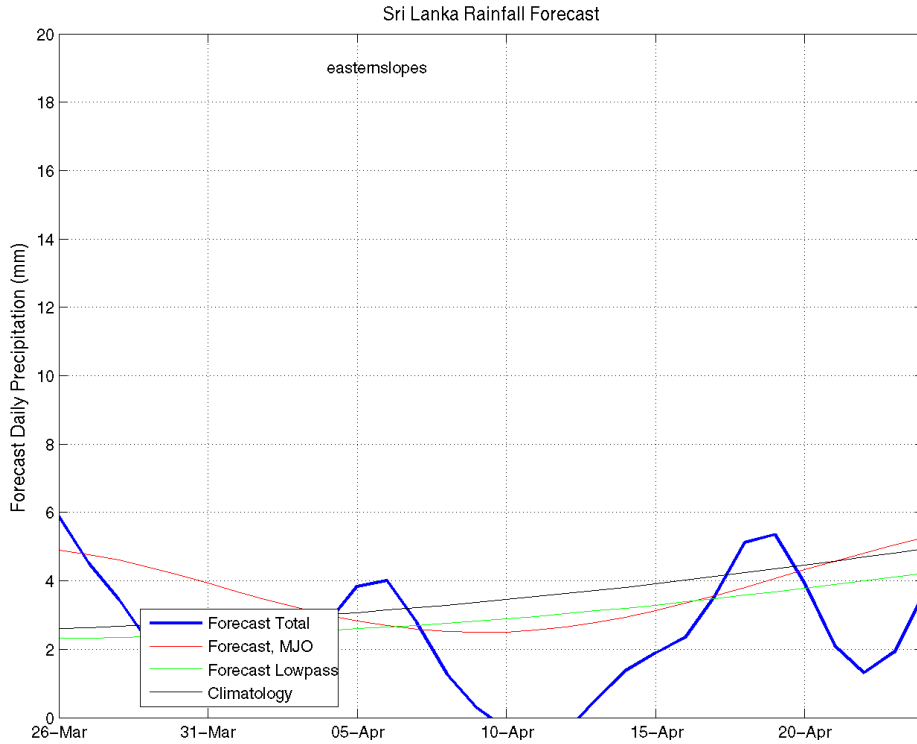
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



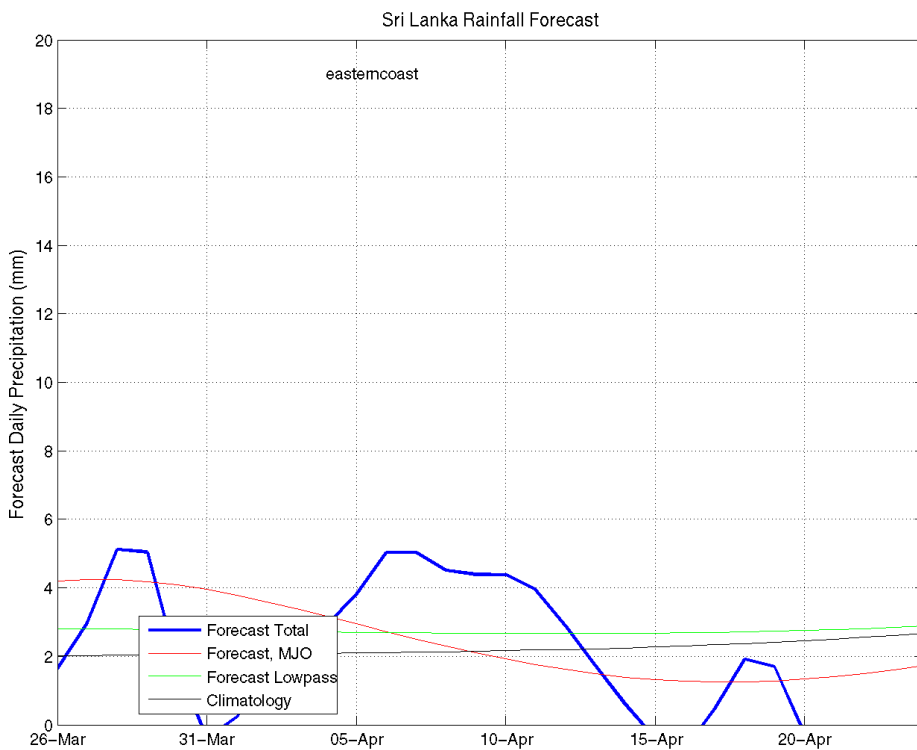
**Western Coast (Rainfall Scale from 0-20 mm/day)**



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

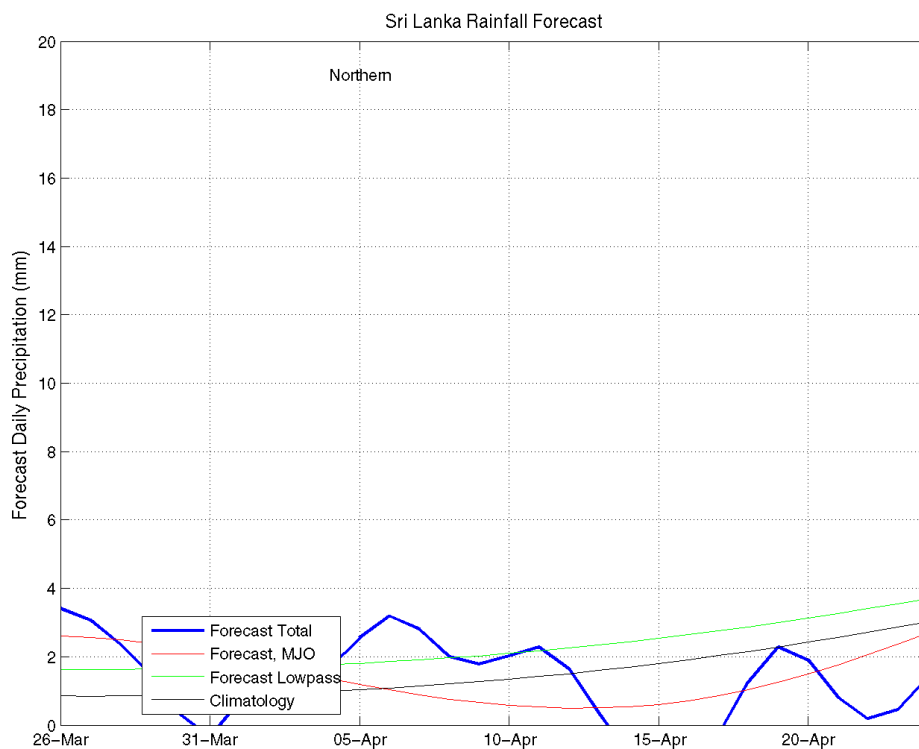


**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**

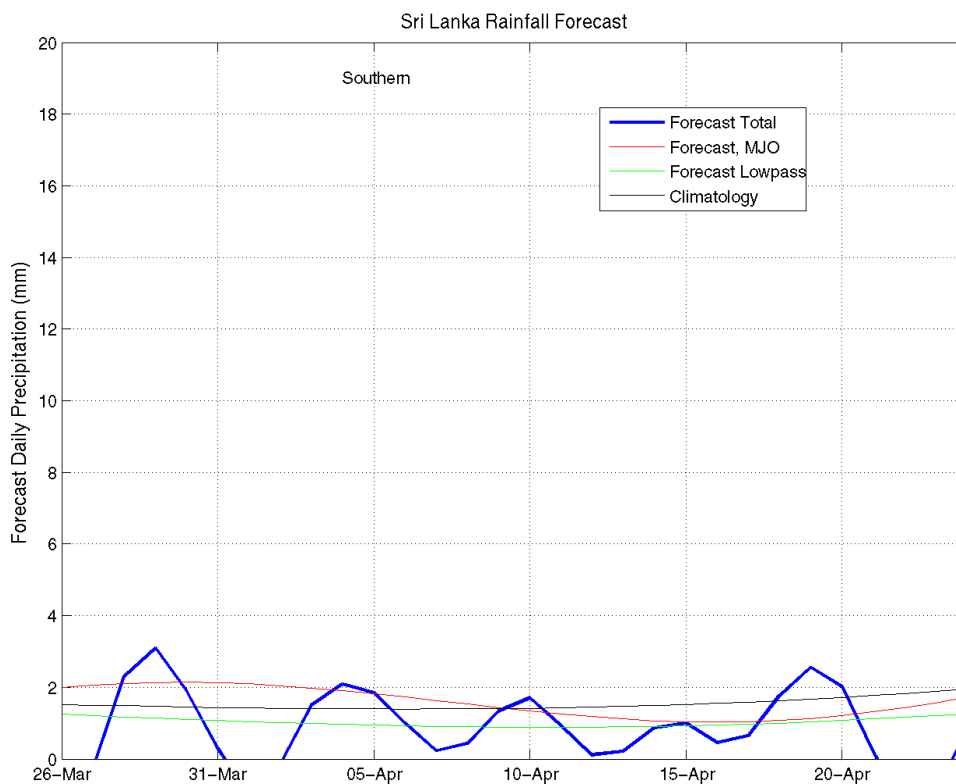




**Northern Region (Rainfall Scale- from 0-20 mm/day)**



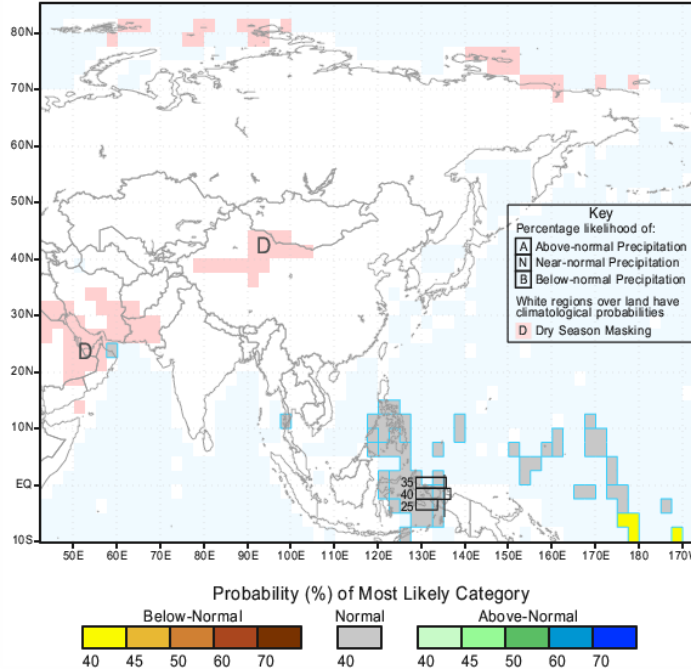
**Southern Region (Rainfall Scale- from 0-20 mm/day)**





**e) Seasonal Rainfall and Temperature Predictions from IRI**

IRI Multi-Model Probability Forecast for Precipitation  
for April-May-June 2013, Issued March 2013



IRI Multi-Model Probability Forecast for Temperature  
for April-May-June 2013, Issued March 2013

