

## Experimental Climate Monitoring and Prediction

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6 March 2014

### 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/>

## 20 February, 2014 PACIFIC SEAS STATE

During January through early February the observed ENSO conditions moved to the borderline of cool-neutral and weak La Nina. However, most of the ENSO prediction models continue to indicate neutral ENSO into northern spring 2014. During late spring and summer a warming tendency is seen in both dynamical and statistical models..

(Text Courtesy IRI)

## INDIAN OCEAN STATE

The seas around Sri Lanka showed neutral sea surface temperature during 23<sup>rd</sup> February-1<sup>st</sup> March 2014.

### MJO STATE

MJO is neutral.

### Highlights

#### Monitoring and Predictions:

Existing rainfall condition is likely to decrease gradually after 9<sup>th</sup> of March 2014. However, eastern slopes and coasts are likely to observe increasing pattern of rainfall, with less than 4 mm/day of rainfall. No significant rainfall events are expected. For 8<sup>th</sup> of March, patches of Galle, Kalutara and Ratnapura districts shall experience significant rainfall (less than 65 mm/day).

### Summary

#### Monitoring

**Weekly Monitoring:** During the past week entire country experienced dry condition throughout, except on 28<sup>th</sup> February southern half of the island received less than 10 mm of rainfall.

**Monthly Monitoring:** Ratnapura district received the highest average rainfall during February 2014 (more than 5mm/day of average rainfall). However during February 2014, entire country experienced below normal rainfall and highest negative anomaly recorded at Batticaloa and Ampara district.

#### Predictions

**14 day prediction:** During 5<sup>th</sup>-11<sup>th</sup> March 2014, Southwestern regions shall receive less than 25 mm of rainfall/week and rest of the regions shall receive less than 5 mm of rainfall/week. During 12<sup>th</sup>-18<sup>th</sup> March, entire Sri Lanka shall receive rainfall below 45 mm/week.

**IMD WRF & IRI Model Forecast:** For 7<sup>th</sup> of March, IMD WRF model predicts less than 8 mm of rainfall for Nuwara-Eliya district and for the parts of nearby districts. For 8<sup>th</sup> of March, patches of Galle, Kalutara and Ratnapura districts shall experience less than 65 mm or rainfall. However, for the same day southern half of the island receive more rainfall compared to the Northern half of the island. IRI model predicts 25-50 mm/6 days of rainfall for Colombo-Kalutara, Ratnapura, Nuwara-Eliya, Badulla, Kandy and Kegalle districts for the coming week (5<sup>th</sup>-10<sup>th</sup> March 2014).

**30 Days Prediction: Overall-** Existing rainfall condition is likely to decrease gradually after 9<sup>th</sup> of March 2014. **Western Slopes and Coast-** The rainfall pattern persisting in the entire country shall be observed in this region, but with higher amount of daily predicted rainfall. **Eastern Slopes-** Rainfall is likely to increase till 9<sup>th</sup> and it remain constant till 14<sup>th</sup>. However, rainfall is likely to observe below 4mm/day. **Eastern Coast-** The rainfall pattern persisting in the Eastern slopes shall be observed in this region. **Northern-** Rainfall shall decrease gradually till 15<sup>th</sup> March. **Southern Region-** The rainfall pattern persists in the Northern region shall be observed in this region, but decreasing trend of rainfall is likely to end after 14<sup>th</sup> March.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on February 2014; for March 2014 to May 2014, there is a 40-45% 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
- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

#### 2. Predictions

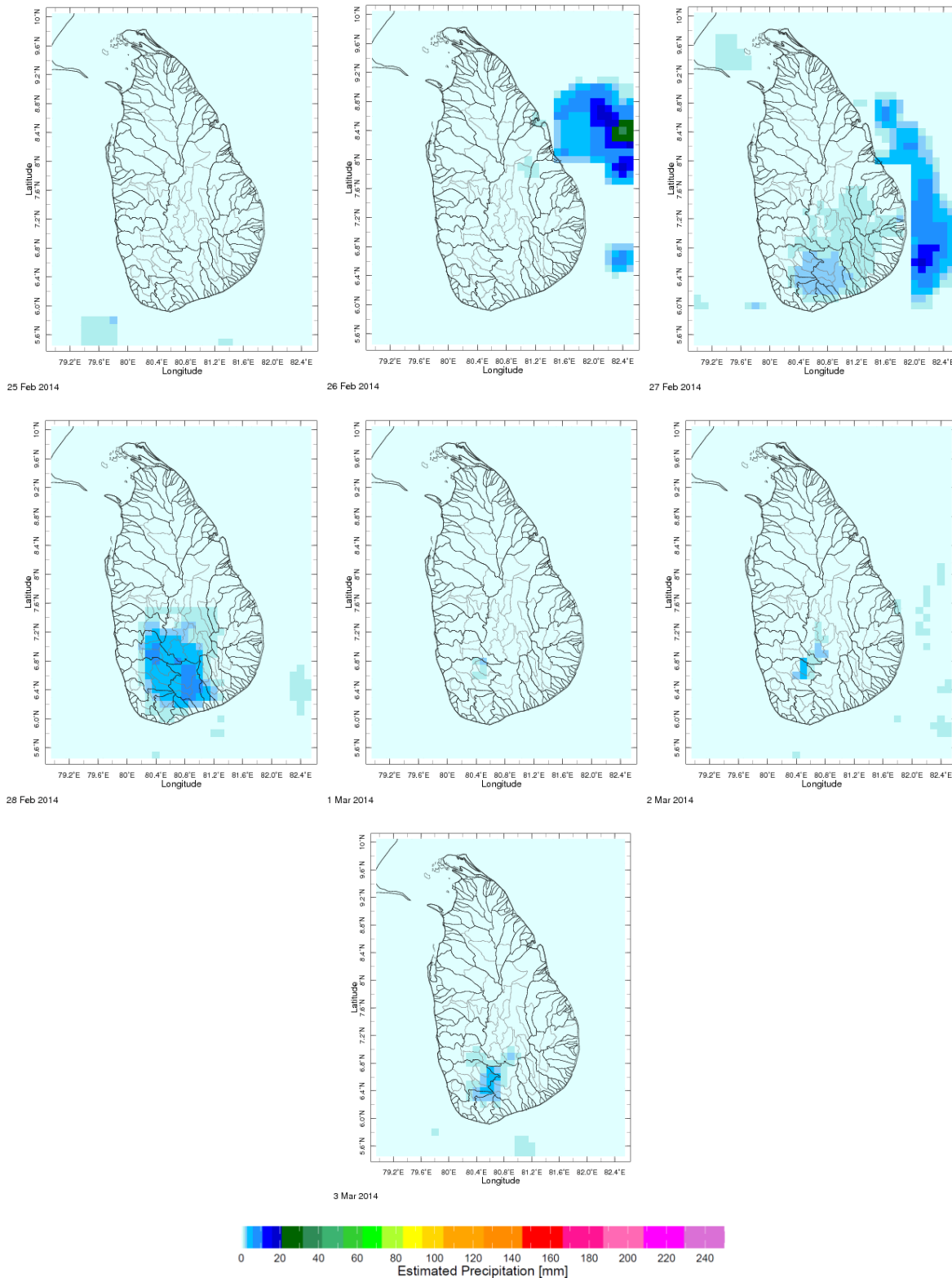
- NCEP GFS Ensemble 1-14 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

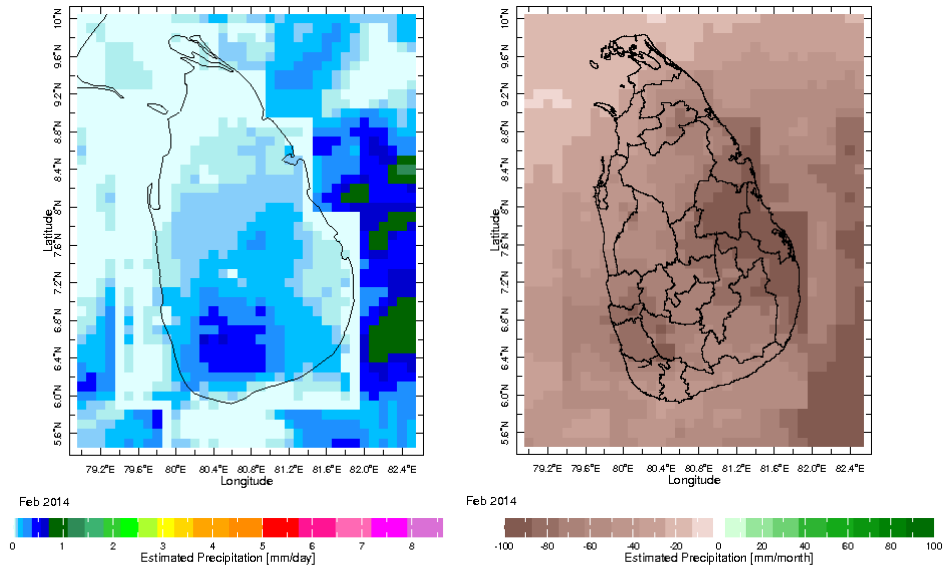
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

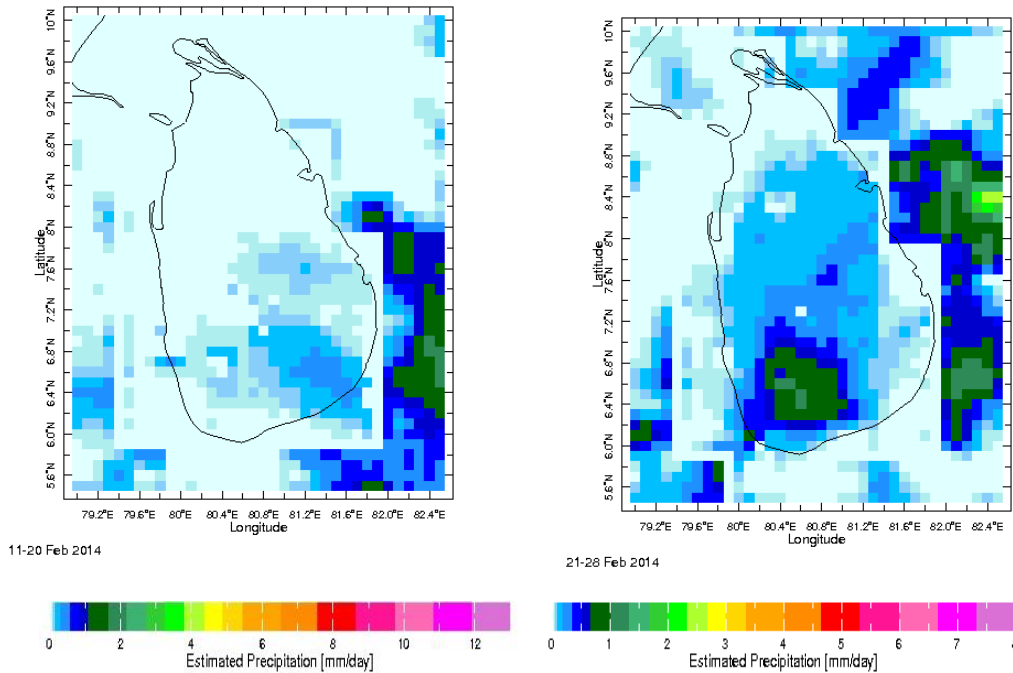
### a) Daily Satellite Derived Rainfall Estimate Maps: 25<sup>th</sup> February-3<sup>rd</sup> March 2014 (Left-Right, Top-Bottom)



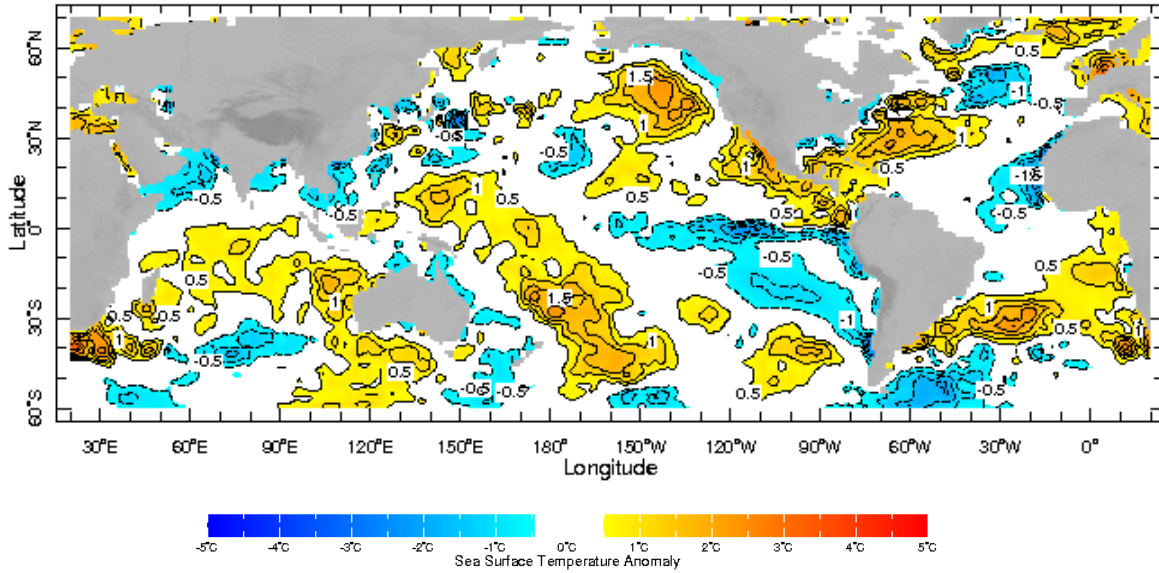
**b) Monthly Satellite Derived Rainfall Estimates for January 2014 (Average – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 February & 21-28 February, 2014)**



**d) Weekly Average SST Anomalies**



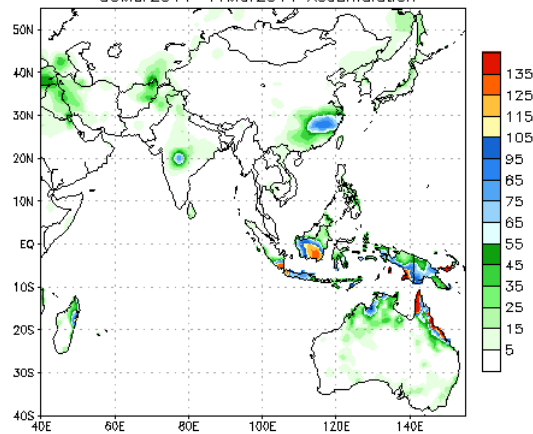
**Weekly Average SST Anomalies ( $^{\circ}$ C), 23<sup>rd</sup> February-1<sup>st</sup> March, 2014**

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

## 2. Predictions

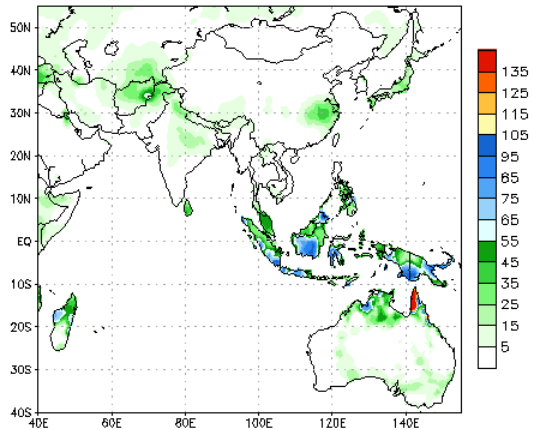
### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 05Mar2014  
05Mar2014-11Mar2014 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 05Mar2014  
12Mar2014-18Mar2014 Accumulation

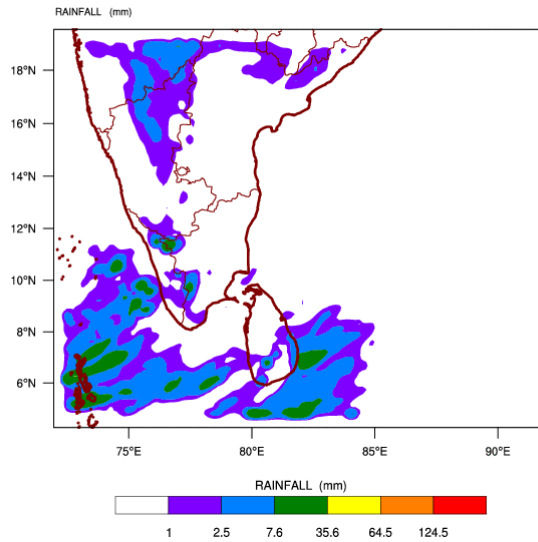


Bias correction based on last 30-day forecast error

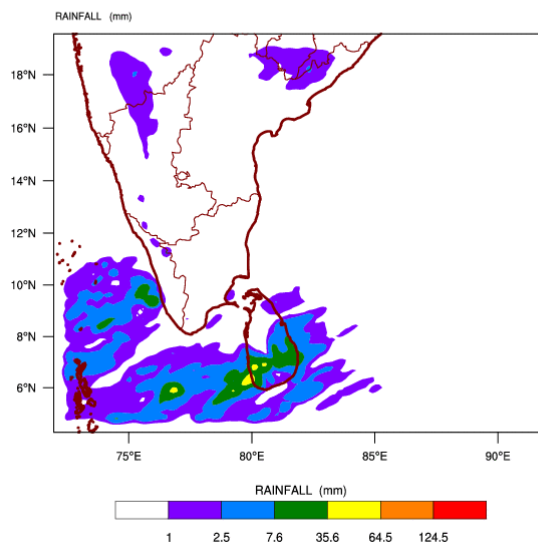
Source – NOAA Climate Prediction Center

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

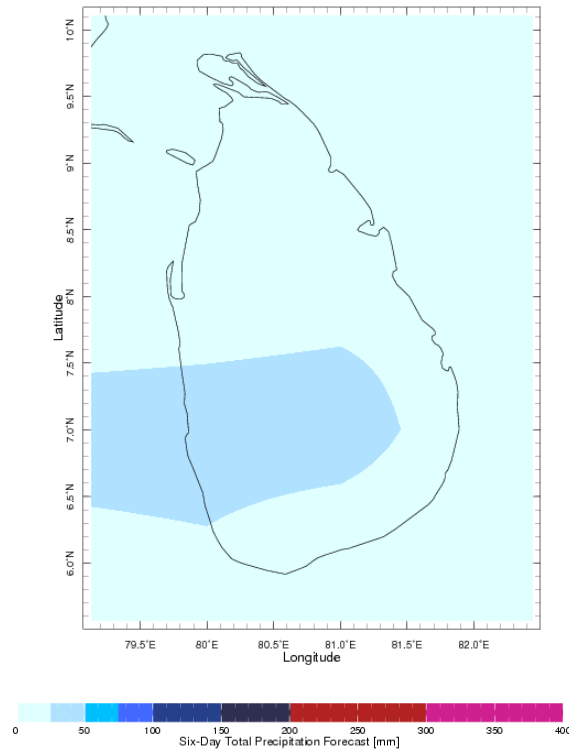
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 05-03-2014 valid for 03 UTC of 07-03-2014



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 05-03-2014 valid for 03 UTC of 08-03-2014



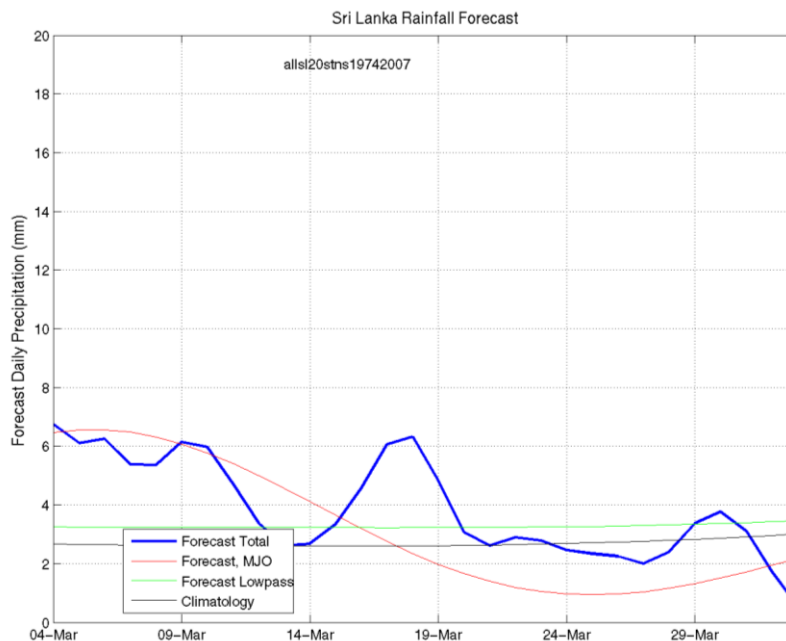
**c) Weekly Precipitation Forecast for 5<sup>th</sup>-10<sup>th</sup> March 2014 (Precipitation Forecast in Context Map Tool, IRI)**



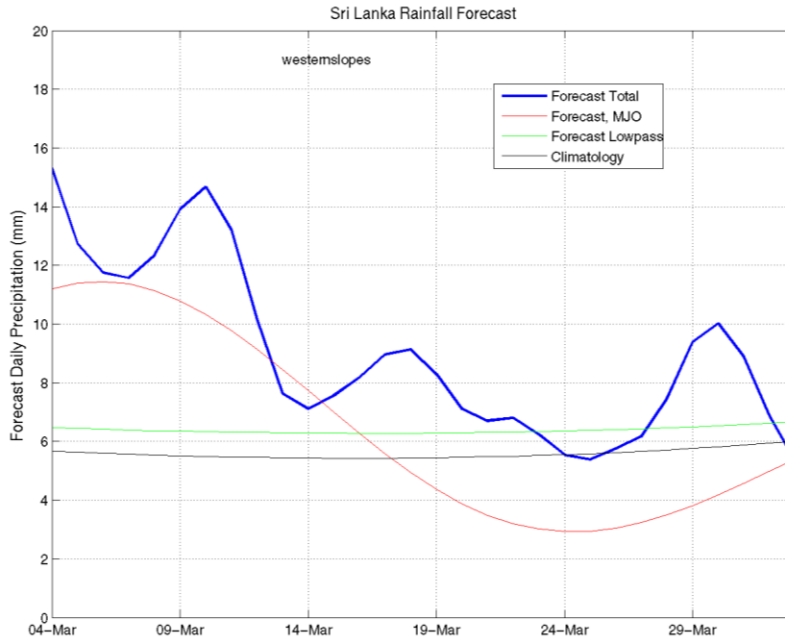
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 5<sup>th</sup> March, 2014

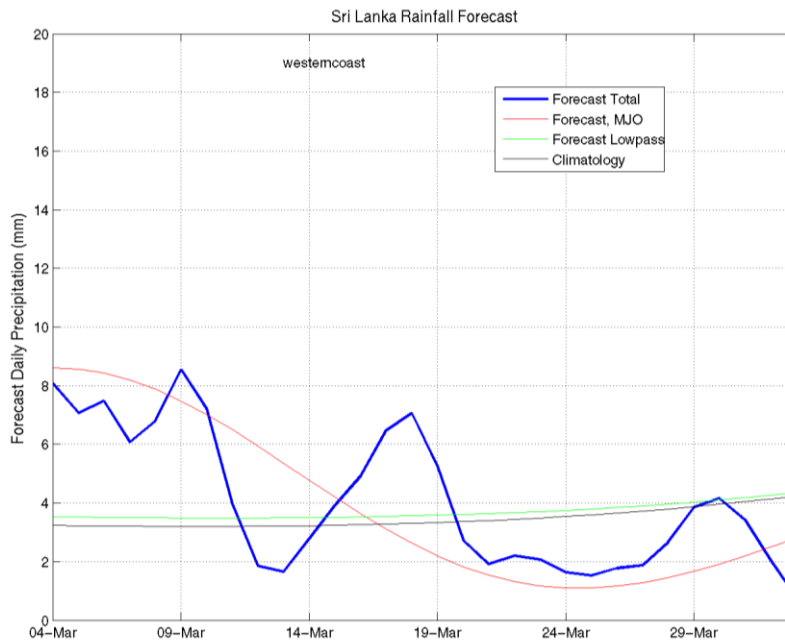
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



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

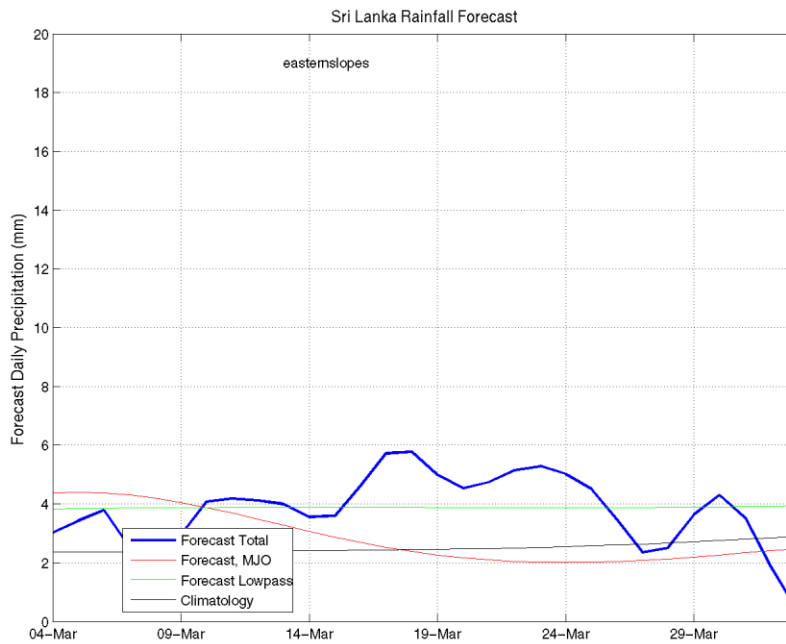


**Western Coast (Rainfall Scale from 0-20 mm/day)**

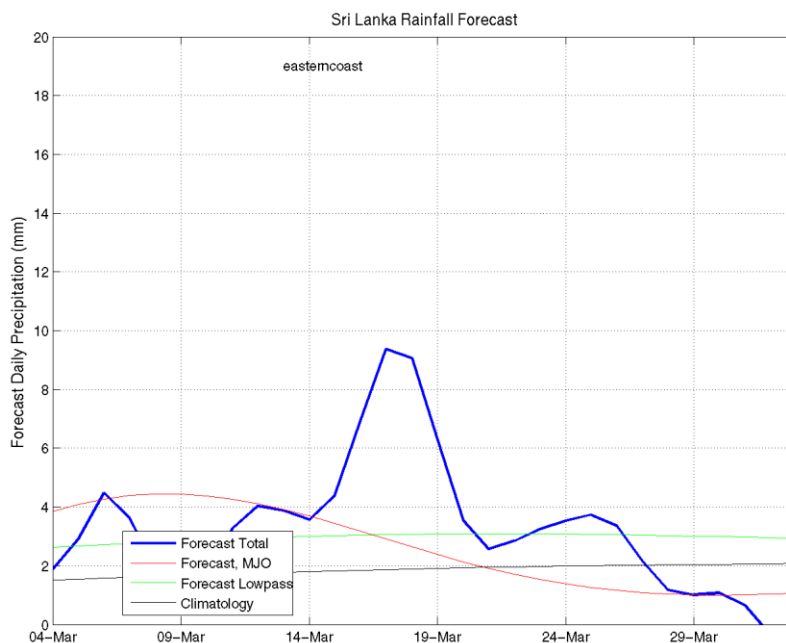




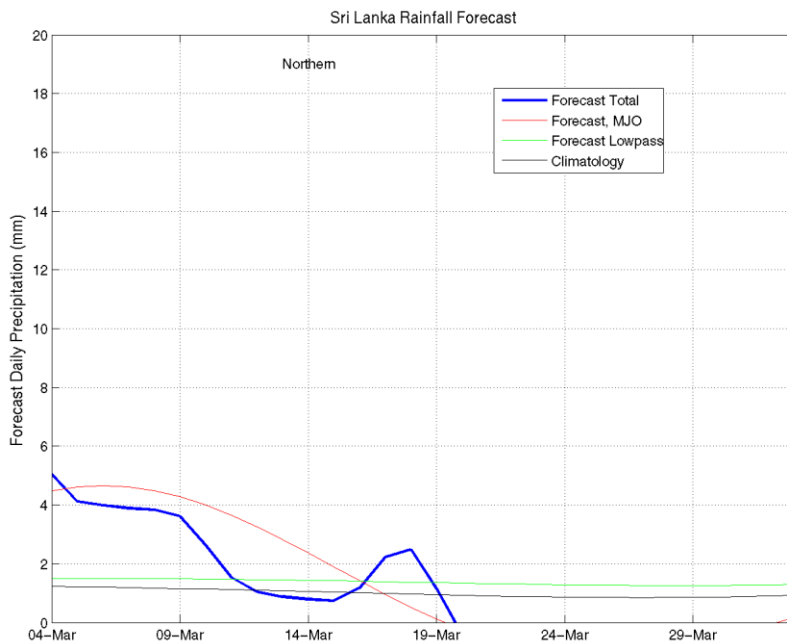
**Eastern Slopes (Rainfall Scale- from 0-20 mm/day)**



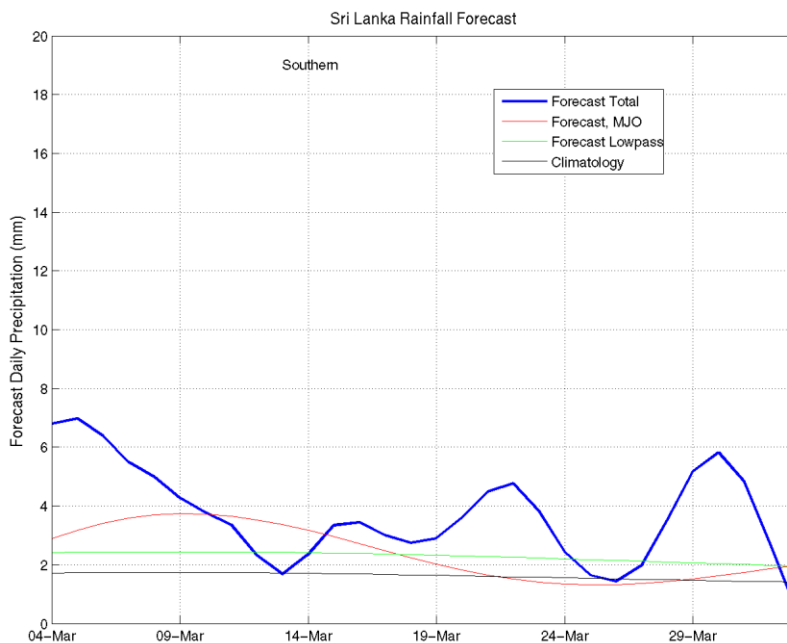
**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**



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

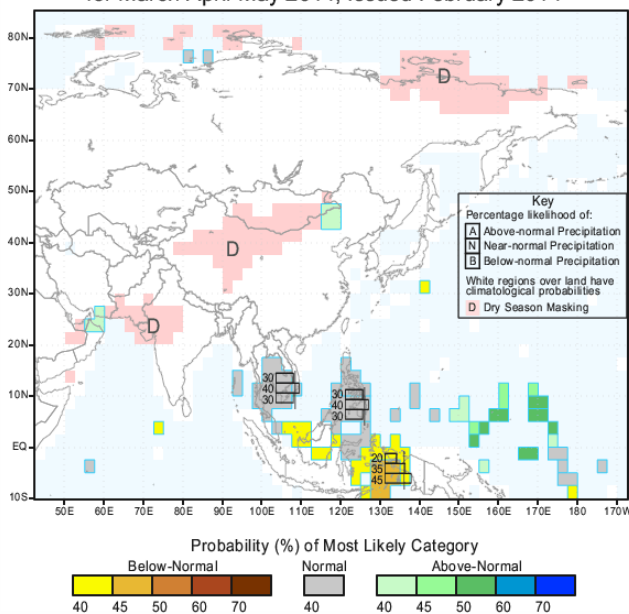


**Southern Region (Rainfall Scale- from 0-20 mm/day)**



*e) Seasonal Rainfall and Temperature Predictions from IRI*

IRI Multi-Model Probability Forecast for Precipitation  
for March-April-May 2014, Issued February 2014



IRI Multi-Model Probability Forecast for Temperature  
for March-April-May 2014, Issued February 2014

