

## Experimental Climate Monitoring and Prediction

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12 February 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/>

## 16 January, 2014 PACIFIC SEAS STATE

During November through early December the observed ENSO conditions remained neutral.

Most of the ENSO prediction models indicate a continuation of neutral ENSO into early 2014.

During northern spring and Summer a warming tendency is seen in both dynamical and statistical models.

(Text Courtesy IRI)

## INDIAN OCEAN STATE

Northern sea of Sri Lanka showed -1<sup>0</sup>C anomaly cold sea surface temperature around western side of Sri Lanka and for normal seas surface temperature observed rest of the seas around Sri Lanka during 2<sup>nd</sup>-8<sup>th</sup> February 2014.

## MJO STATE

MJO is neutral.

### Highlights

#### Monitoring and Predictions:

*The existing dry condition shall persist till 15<sup>th</sup> of February 2014. However during next week southern half of the island shall be wetter than the northern half of the island. No significant rainfall events are expected.*

### Summary

#### Monitoring

**Weekly Monitoring:** During the week entire country experienced dry condition throughout.

**Monthly Monitoring:** Ampara, Matale and Ratnapura districts received rainfall during the month of January 2014 within the range 1 to 4 mm/day.

#### Predictions

**14 day prediction:** During 11<sup>th</sup> to 17<sup>th</sup> February 2014, Sri Lanka shall have a dry condition throughout, except for Galle and Kalutara districts (less than 5 mm/day). During 18<sup>th</sup> to 24<sup>th</sup> February, Sri Lanka shall have a dry condition throughout, except for Galle district shall receive more rainfall than the previous week.

**IMD WRF & IRI Model Forecast:** For 13<sup>th</sup> of February, IMD WRF model predicts dry conditions over the entire country. For the same day, patches of Galle and Nuwara Eliya districts shall receive less than 3 mm of rainfall. For 14<sup>th</sup> February, the borders of Ratnapura, Nuwara Eliya and Badulla districts shall receive less than 8 mm of rainfall. IRI model predicts rainfall less than 25mm/week for the southern half of the island for the coming week (11<sup>th</sup>-16<sup>th</sup> February 2014).

**30 Days Prediction: Overall-** Dry condition shall persist till 15<sup>th</sup> February and rainfall shall increase slightly till 18<sup>th</sup>. But amount of rainfall shall be less than 4 mm/day. These shall no significant rainfall events experience during this week. **Western Slopes-** Rainfall shall increase gradually till 24<sup>th</sup> of February. **Western Coast-** Rainfall shall increase gradually till 20<sup>th</sup> of February. **Eastern Slopes-** Rainfall is not predicted till 17<sup>th</sup> and thereafter rainfall shall increase slowly. **Eastern Coast-** Rainfall is not predicted for most of the period till the end of the month. Slight rainfall incident shall observe during 17<sup>th</sup>-22<sup>nd</sup> February. **Northern-** Rainfall shall vary below 3mm/day till the end of February. **Southern Region-** Dry condition shall persists till 16th February and rainfall shall increase thereafter.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on January 2014; for February 2014 to April 2014, 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

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- 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

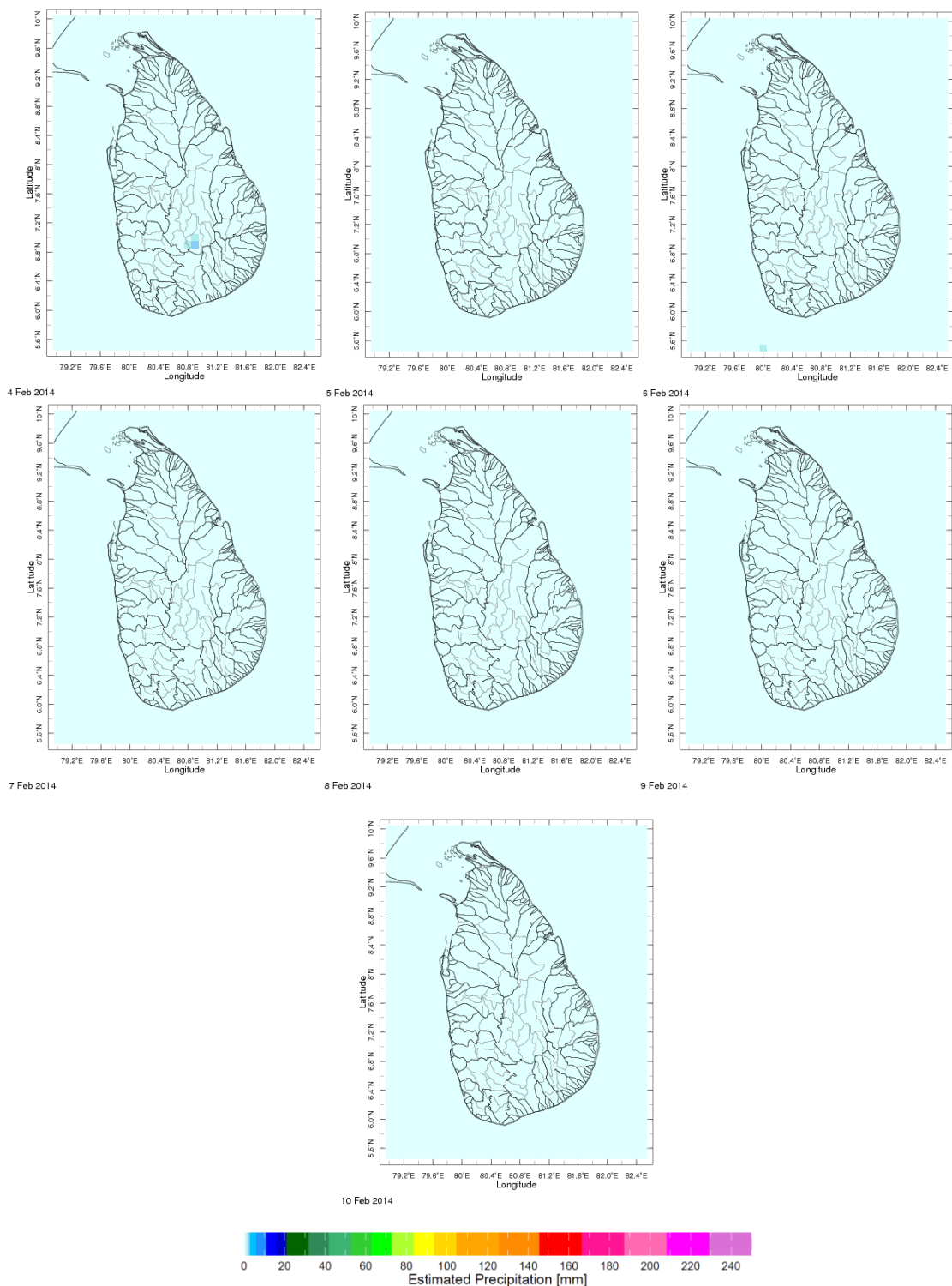
<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

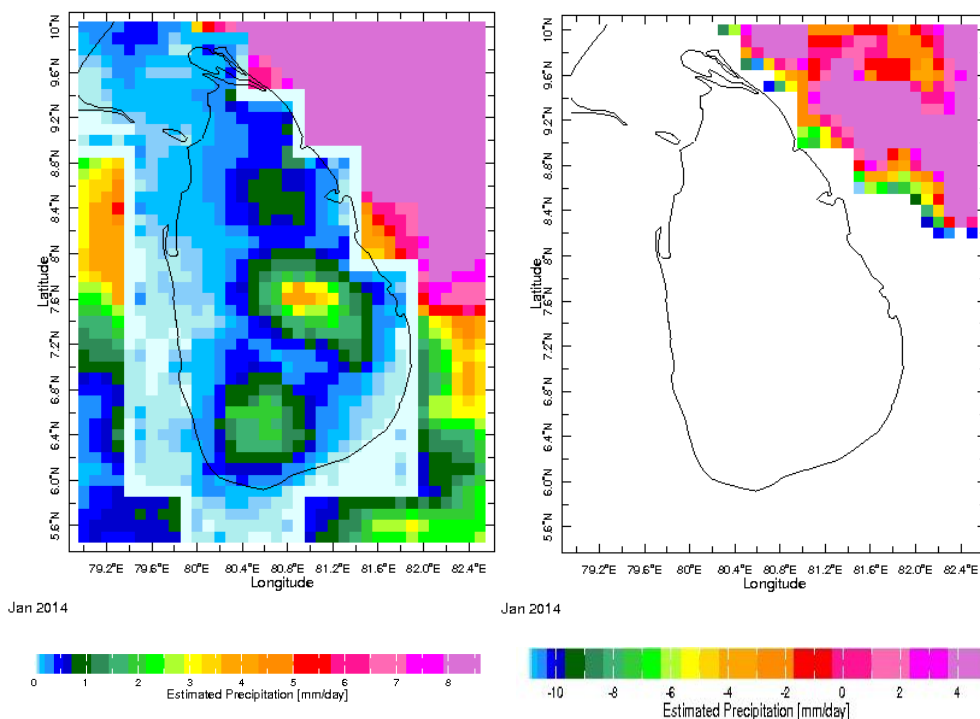
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

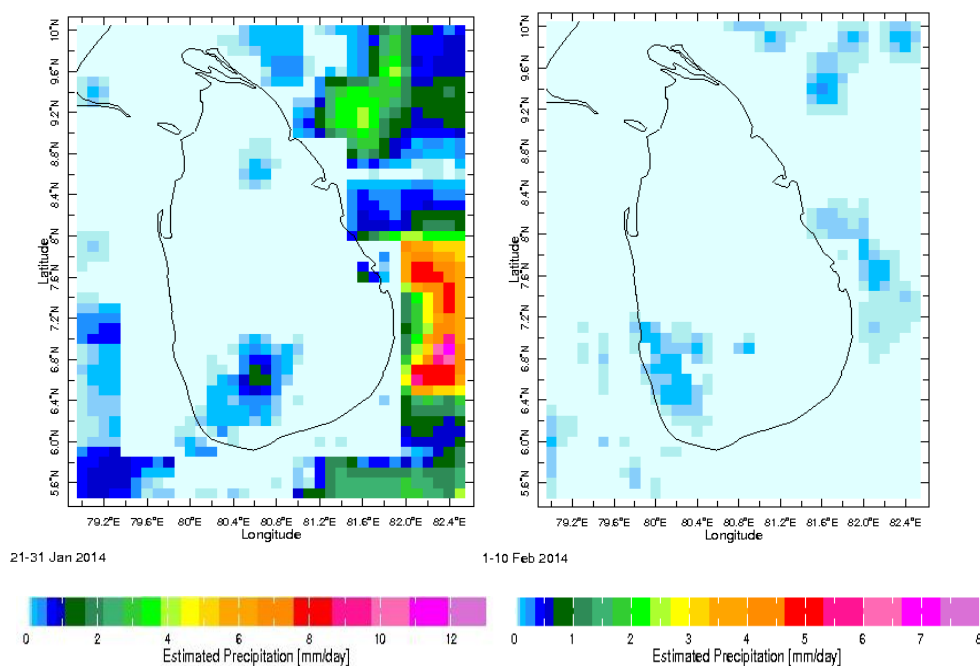
### a) Daily Satellite Derived Rainfall Estimate Maps: 4<sup>th</sup>-10<sup>th</sup> February 2014 (Left-Right, Top-Bottom)



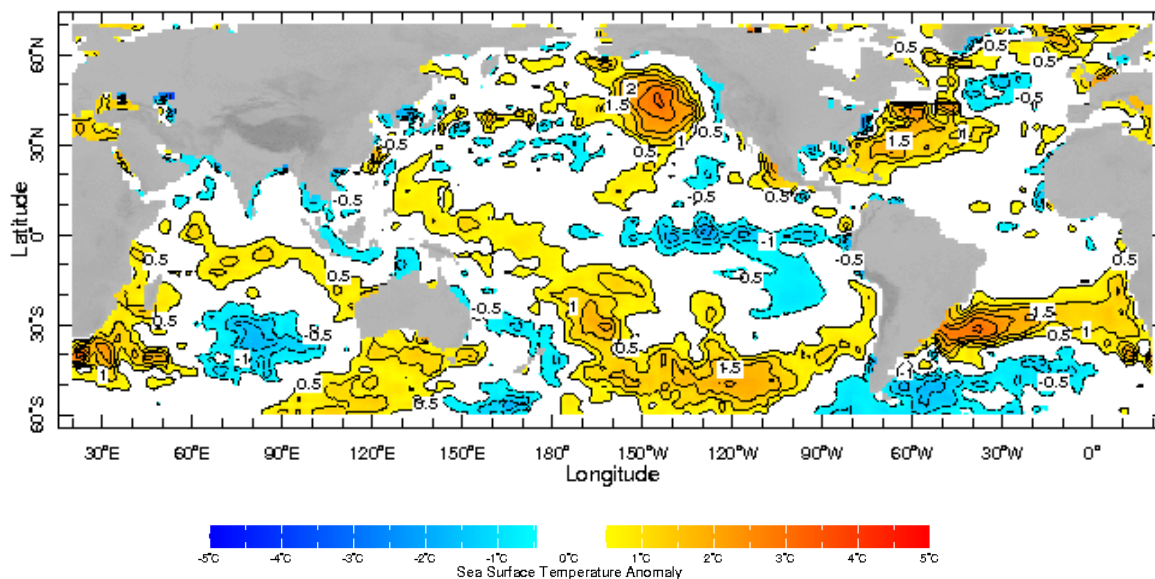
**b) Monthly Satellite Derived Rainfall Estimates for January 2014 (Average – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-30 January, 2013 & 01-10 February, 2014)**



**d) Weekly Average SST Anomalies**



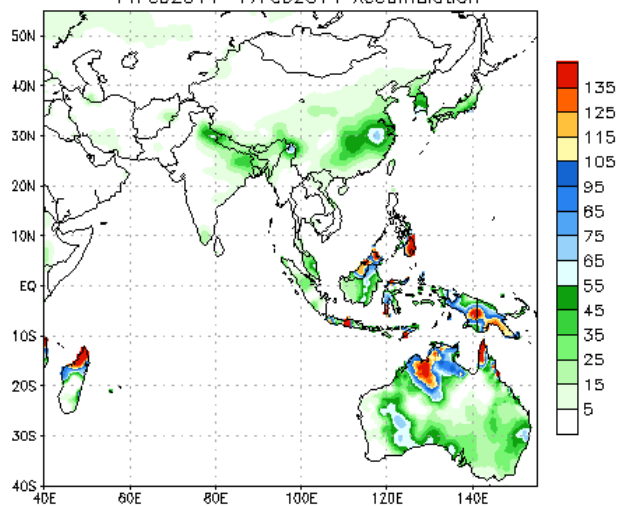
**Weekly Average SST Anomalies (°C), 2<sup>nd</sup>-8<sup>th</sup> February, 2014**

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

## 2. Predictions

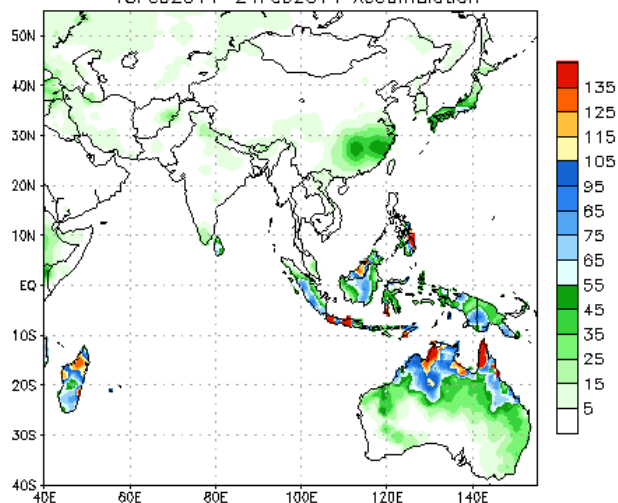
### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 11Feb2014  
11Feb2014-17Feb2014 Accumulation



Bias correction based on last 30-day forecast error

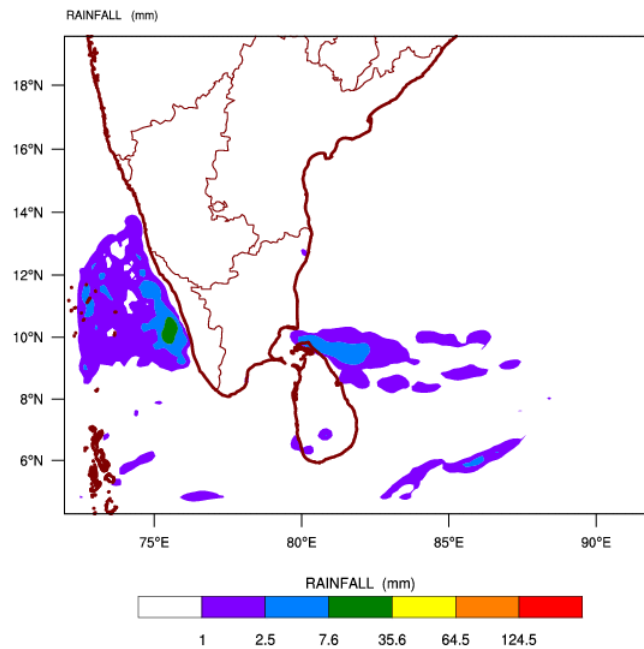
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 11Feb2014  
18Feb2014-24Feb2014 Accumulation



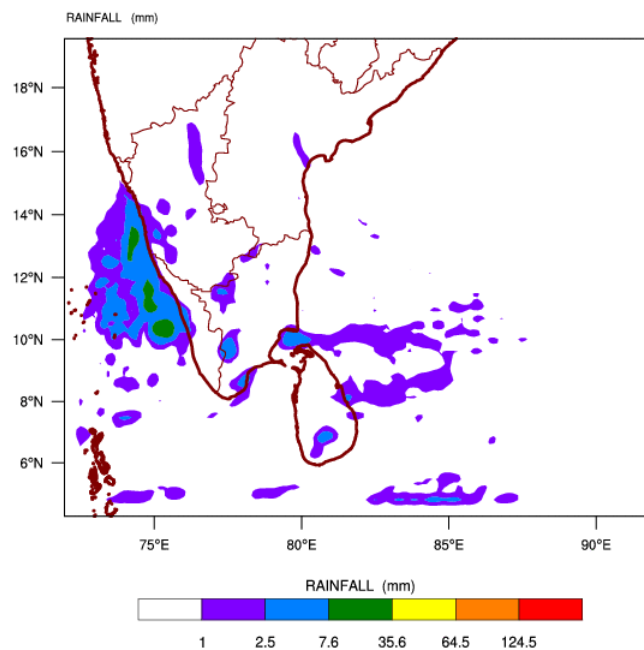
Bias correction based on last 30-day forecast error

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

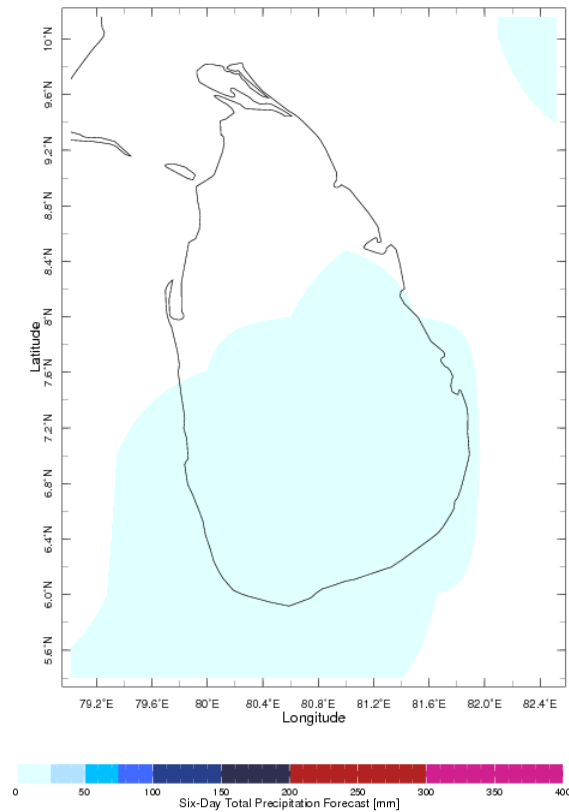
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 11-02-2014 valid for 03 UTC of 13-02-2014



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 11-02-2014 valid for 03 UTC of 14-02-2014



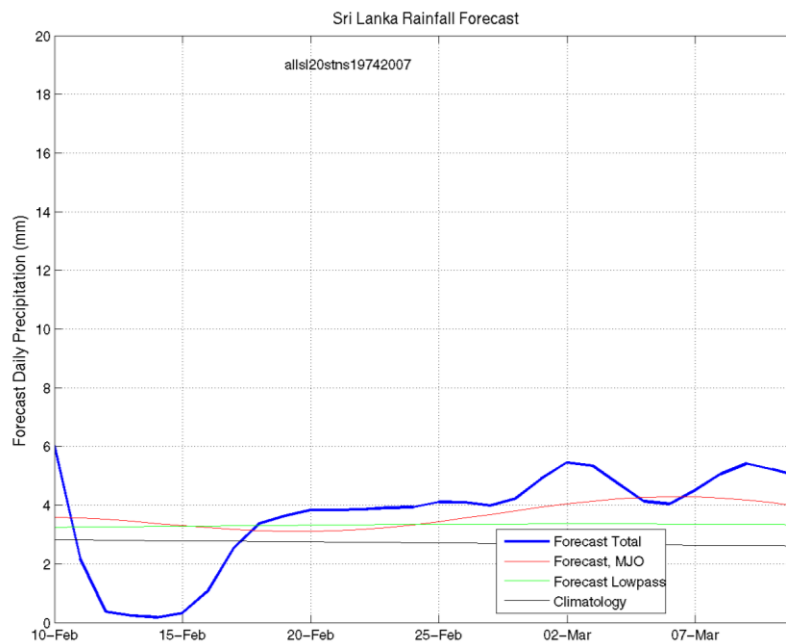
**c) Weekly Precipitation Forecast for 11<sup>th</sup> -16<sup>th</sup> February 2014 (Precipitation Forecast in Context Map Tool, IRI)**



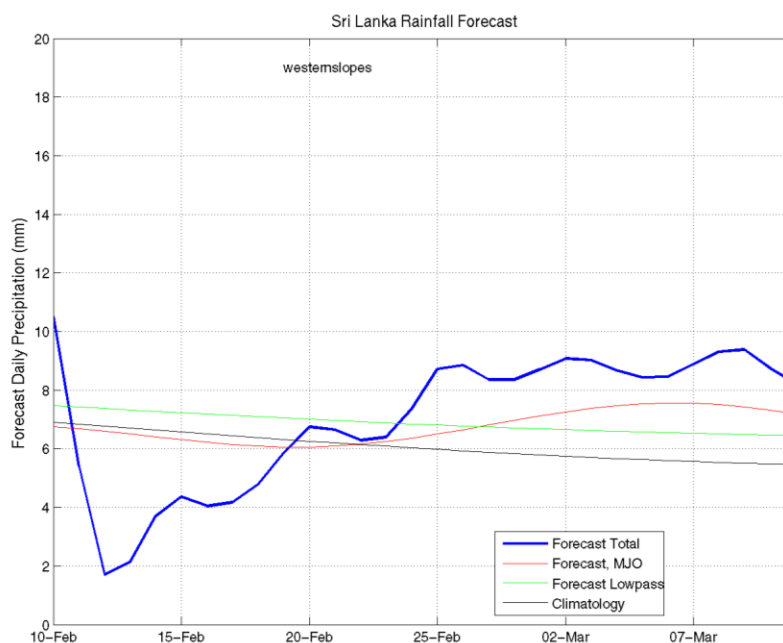
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 11<sup>th</sup> February, 2014

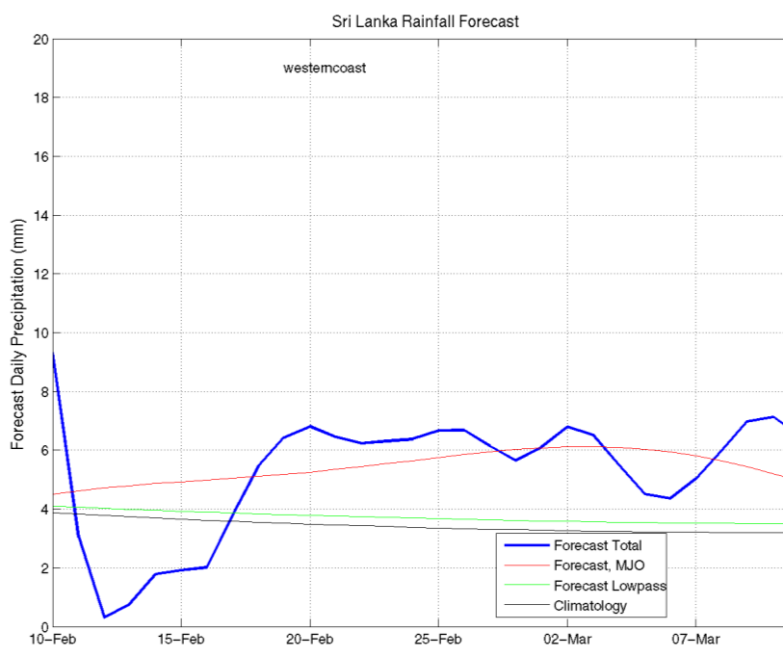
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



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

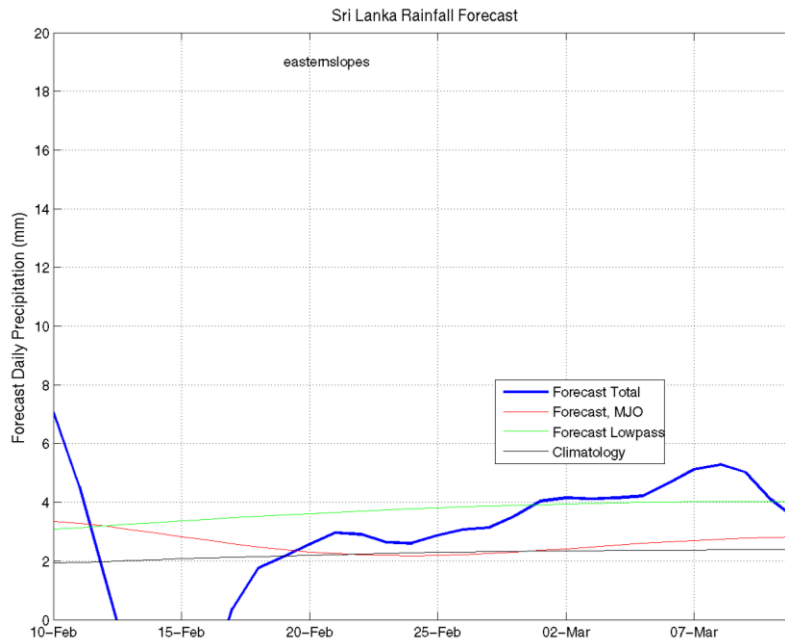


## Western Coast (Rainfall Scale from 0-20 mm/day)

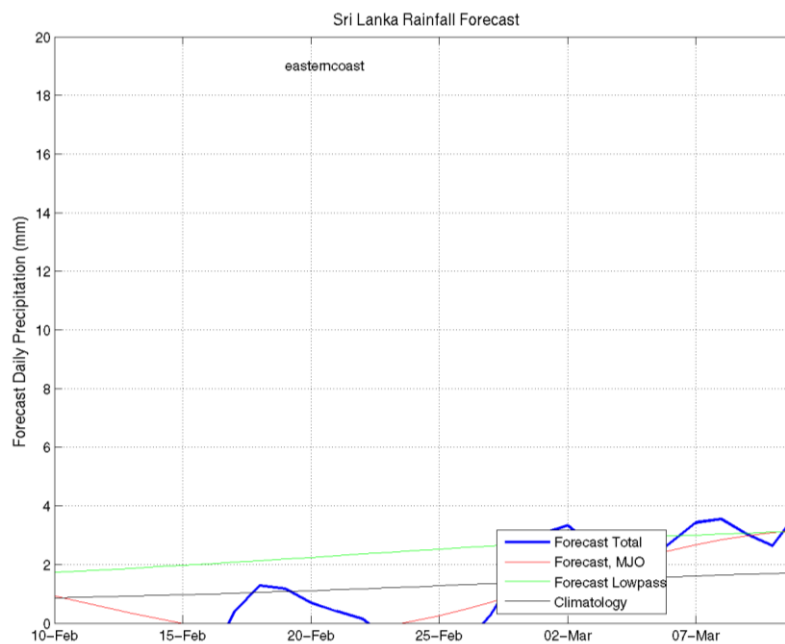




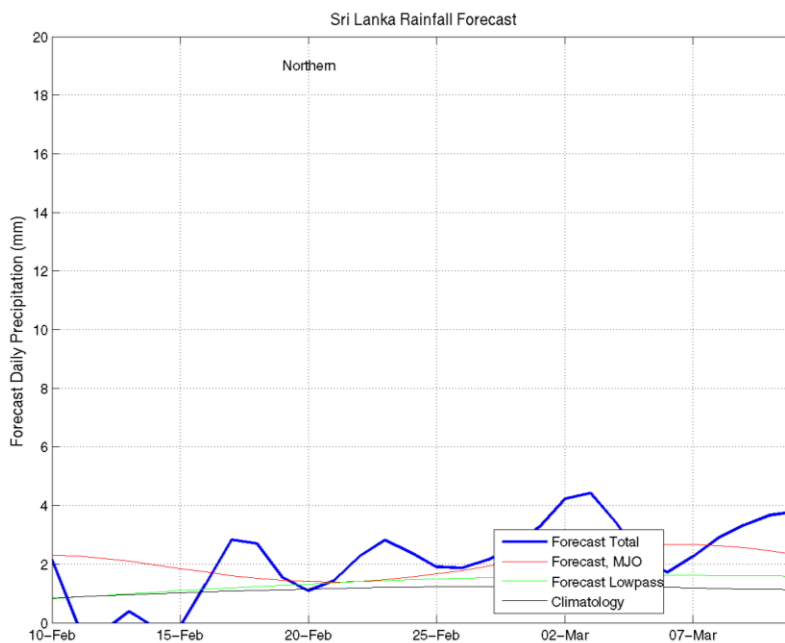
***Eastern Slopes (Rainfall Scale- from 0-20 mm/day)***



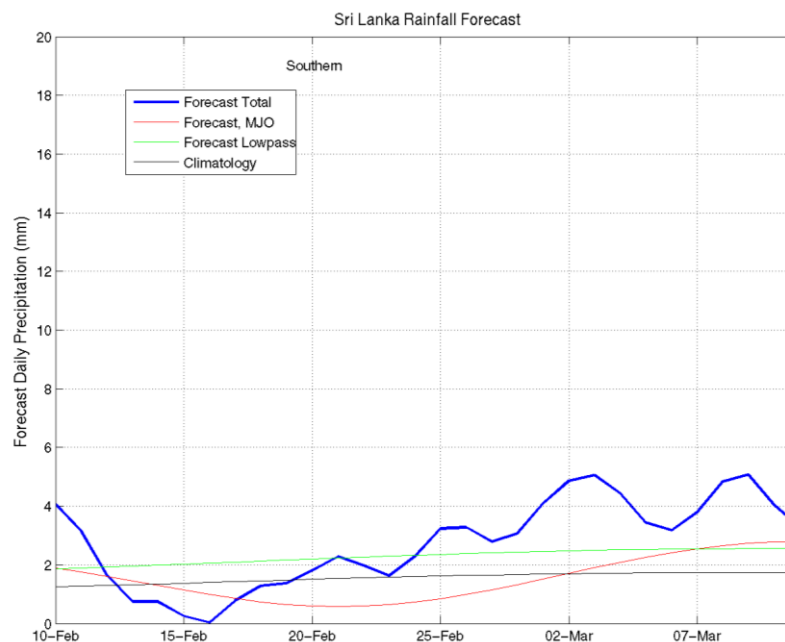
***Eastern Coast (Rainfall Scale- from 0-20 mm/day)***



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

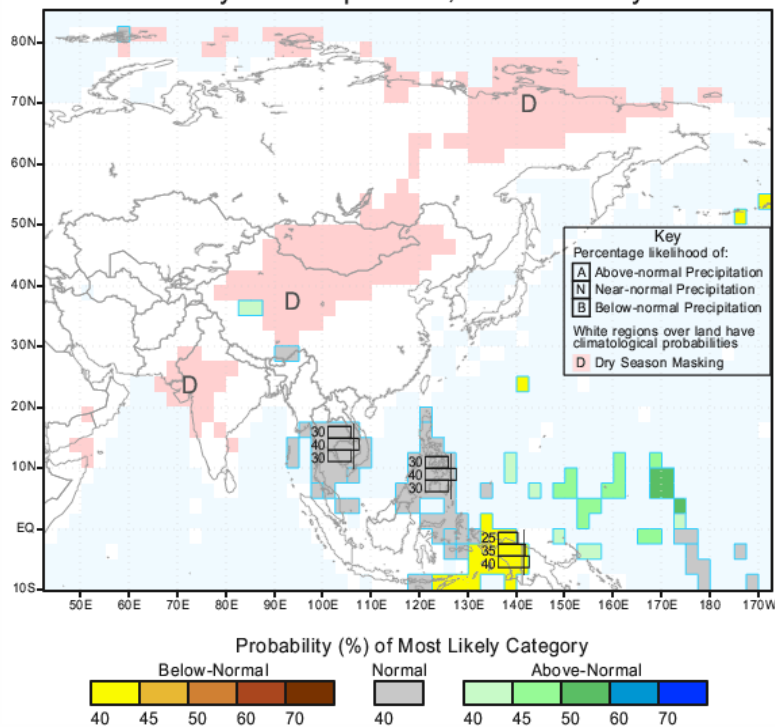


## Southern Region (Rainfall Scale- from 0-20 mm/day)



## e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

