

## Experimental Climate Monitoring and Prediction

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4 December 2013

### 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/>

## November 21, 2013 PACIFIC SEAS STATE

During October through mid-November the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO into the first quarter of 2014.

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

(Text Courtesy IRI)

## INDIAN OCEAN STATE

Southern sea of Sri Lanka showed +1°C anomaly and rest of the seas around Sri Lanka showed neutral seas surface temperature during 24<sup>th</sup>-30<sup>th</sup> November 2013.

## MJO STATE

MJO is entering phase 2 and is likely to enter phase 3 during next week. This phenomenon shall influence Sri Lanka rainfall.

### Highlights

#### Monitoring and Predictions:

*Rainfall shall increase gradually till 13<sup>th</sup> of December 2013. However, Northern, North-central, Eastern and Central provinces are likely to experience significant heaviest rainfall during coming week (5<sup>th</sup>-12<sup>th</sup> December 2013). For coming two days (5<sup>th</sup> & 6<sup>th</sup> December), Northern, North-central, Eastern and Central provinces are likely to observe heavy rainfall and rainfall shall spread towards Southwestern direction in a reducing manner.*

### Summary

#### Monitoring

**Weekly Monitoring:** During 25<sup>th</sup> November-1<sup>st</sup> December 2013, rainfall ranged 5-125 mm/day. Maximum rainfall observed on 25<sup>th</sup> November for Moneragala district. Rest of the days received lower amount of rainfall compared to the beginning of the week.

**Monthly Monitoring:** Kurunegala district received highest average rainfall during the month of October 2013.

#### Predictions

**7-day prediction:** During 3<sup>rd</sup>-9<sup>th</sup> December 2013, entire Sri Lanka received rainfall above 85 mm. Rainfall is likely to spread towards Northern region in an increasing pattern and Northern, North-central and Eastern provinces shall experience more than 135 mm of rainfall.

**IMD WRF Model Forecast & IRI forecast:** For 5<sup>th</sup> of December, IMD WRF model predicts less than 125 mm of rainfall for Northern, North-central, Eastern and Central provinces and rest of the regions shall receive less than 8 mm of rainfall. For 6<sup>th</sup> of December, IMD WRF model predicts less than 125 mm of rainfall for Northern province and rainfall shall spread towards down south of Sri Lanka in a reducing pattern. NOAA model predicts the heaviest rainfall (more than 300 mm/week) for the boarder of Mullaitivu and Trincomalee districts and shall spread towards southwest direction in a reducing manner during 3<sup>rd</sup>-8<sup>th</sup> December 2013.

**30 Days Prediction: Overall-** Rainfall shall increase gradually till 13<sup>th</sup> of December. **Western Slopes** – Rainfall shall increase gradually during 3<sup>rd</sup>-10<sup>th</sup> December and it shall decrease gradually thereafter. **Western Coast** – Rainfall shall vary below 12 mm/day till 13<sup>th</sup> December. However, western slopes and western coasts shall receive same magnitude of the rainfall. **Eastern Slopes** – Rainfall shall increase gradually till 11<sup>th</sup> of December and decrease thereafter. **Eastern Coast** – The rainfall is not predicted till 10<sup>th</sup> December and rainfall shall increase gradually till 12<sup>th</sup>. Thereafter it shall decrease. **Northern region**- Constant amount of rainfall is likely to observe for this region till 13<sup>th</sup> December. **Southern Region**- The rainfall is likely to vary between 2-5 mm/day till 20<sup>th</sup> December.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on November 2013; for December 2013 to February 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

#### 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

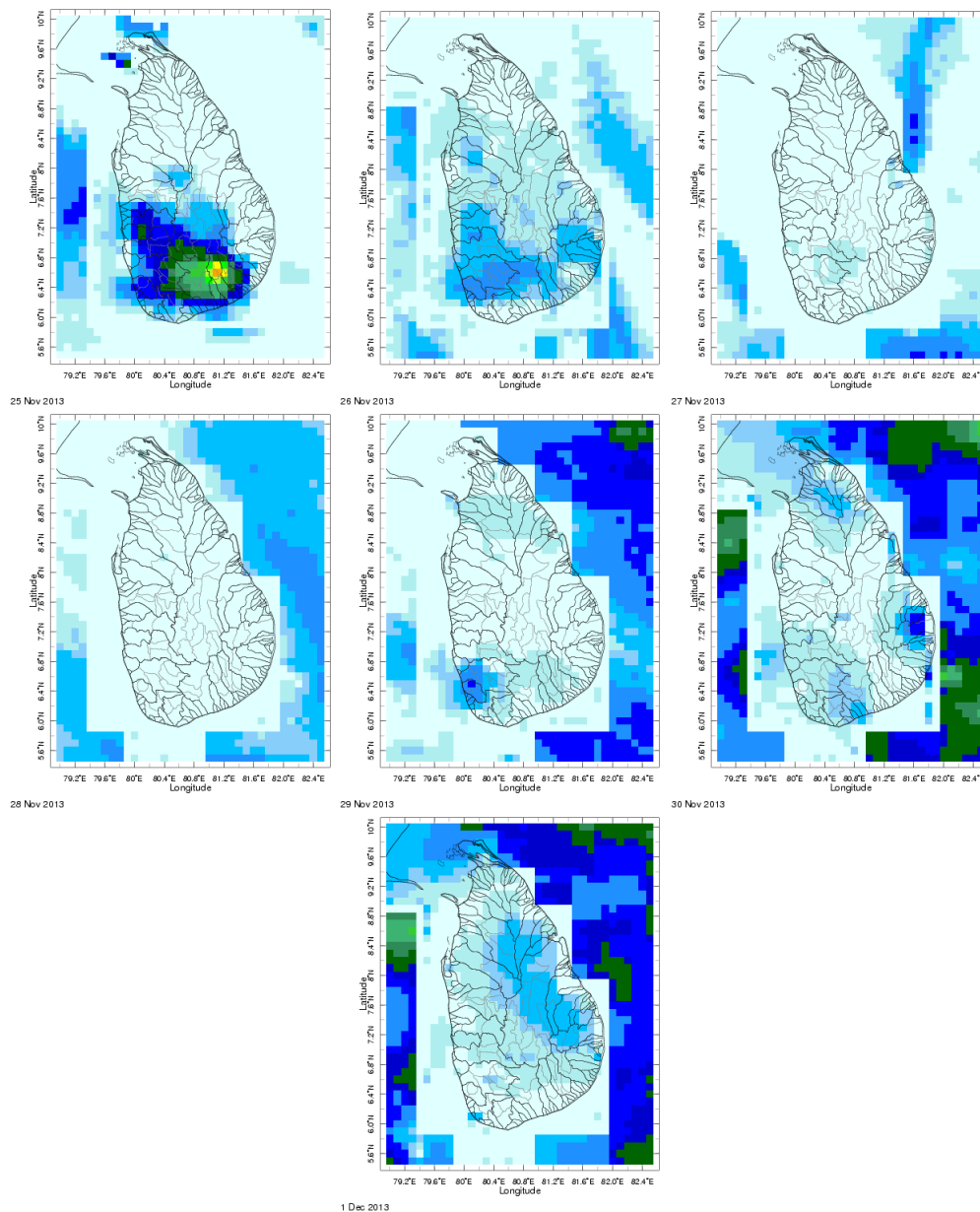
- NCEP GFS Ensemble 1-7 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

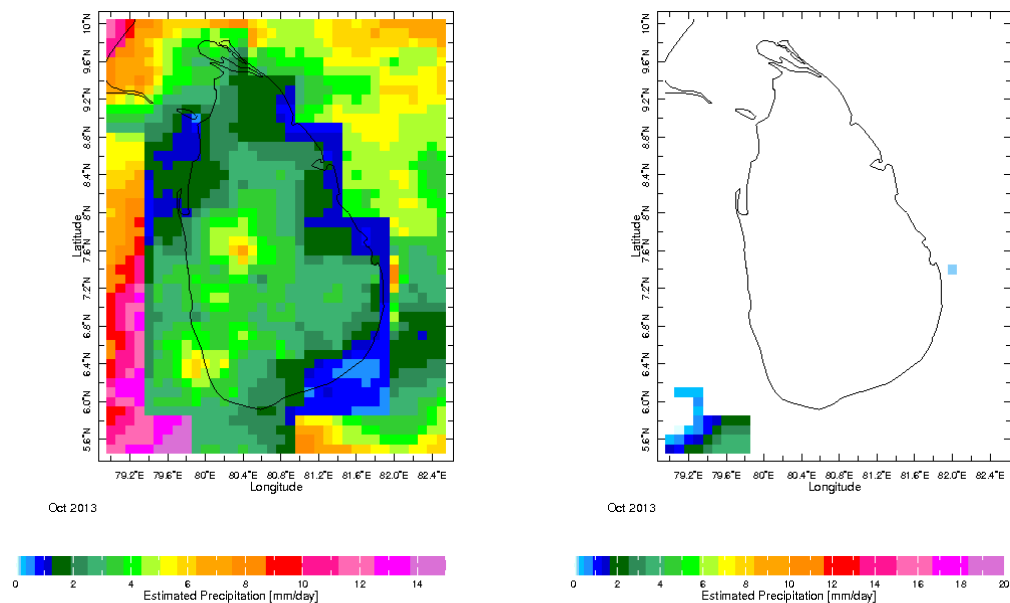
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

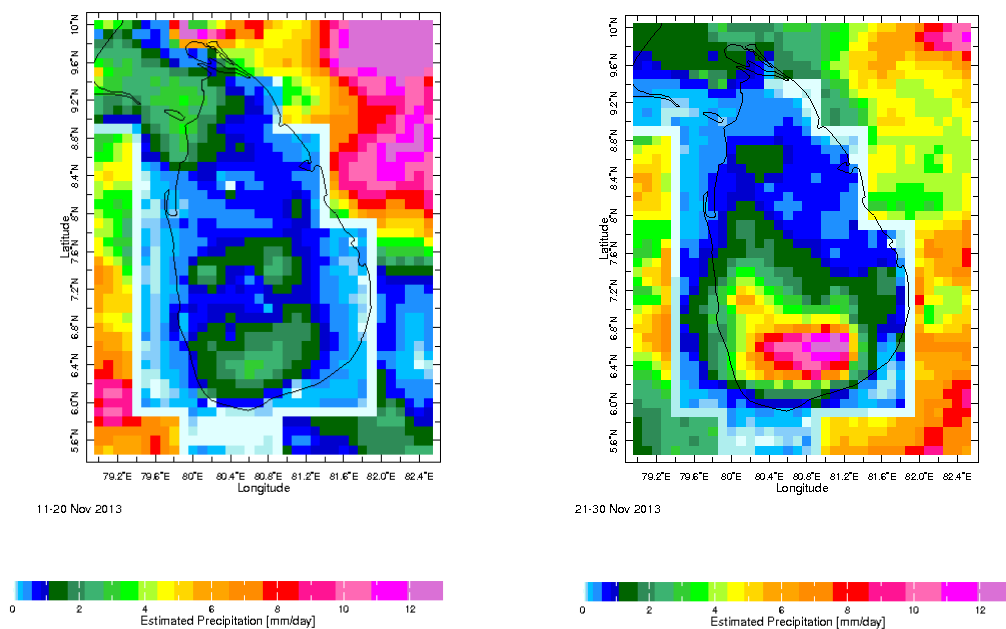
### a) Daily Satellite Derived Rainfall Estimate Maps: 25<sup>th</sup> November-1<sup>st</sup> December 2013 (Left-Right, Top-Bottom)



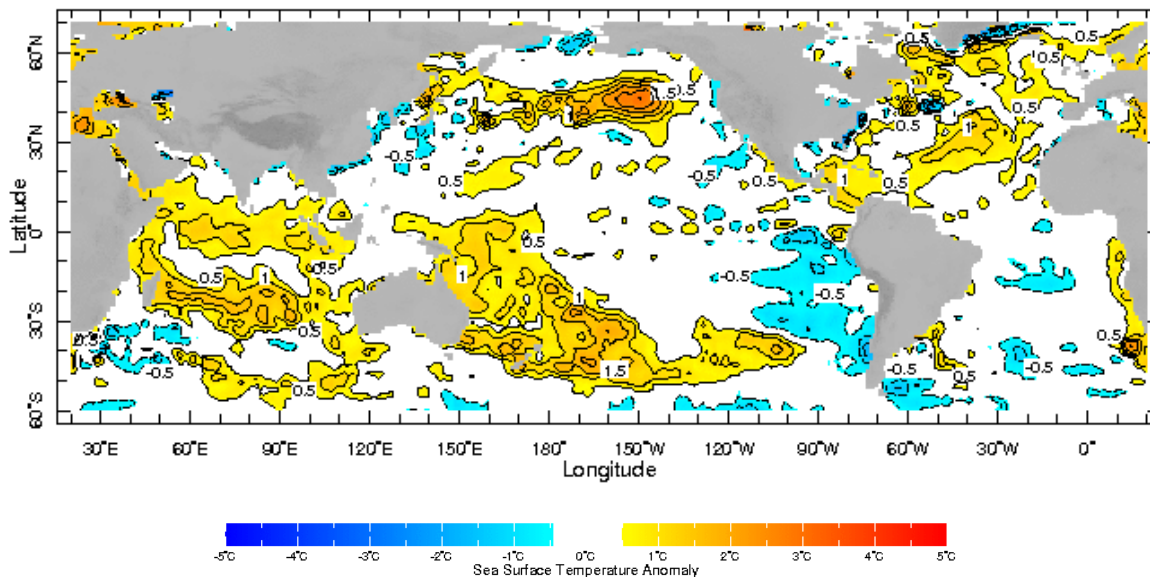
**b) Monthly Satellite Derived Rainfall Estimates for October 2013 (Total – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 November & 21-30 November, 2013)**



## b) Weekly Average SST Anomalies

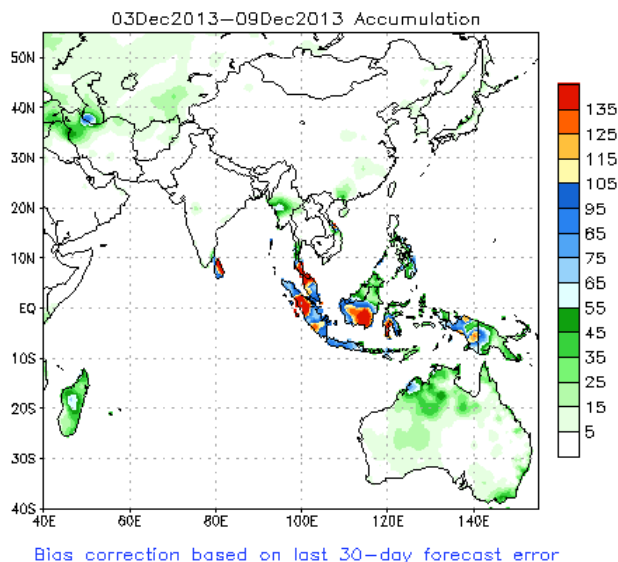


Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 24<sup>th</sup>-30<sup>th</sup> November, 2013

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

## 2. Predictions

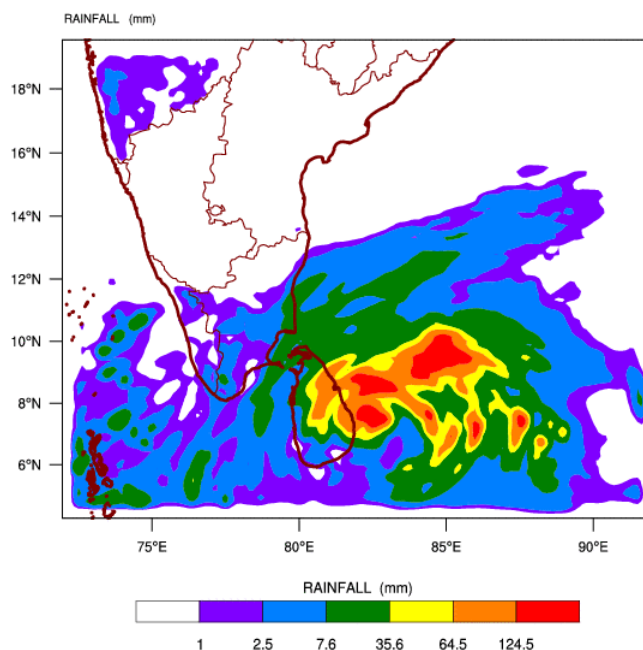
### a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.



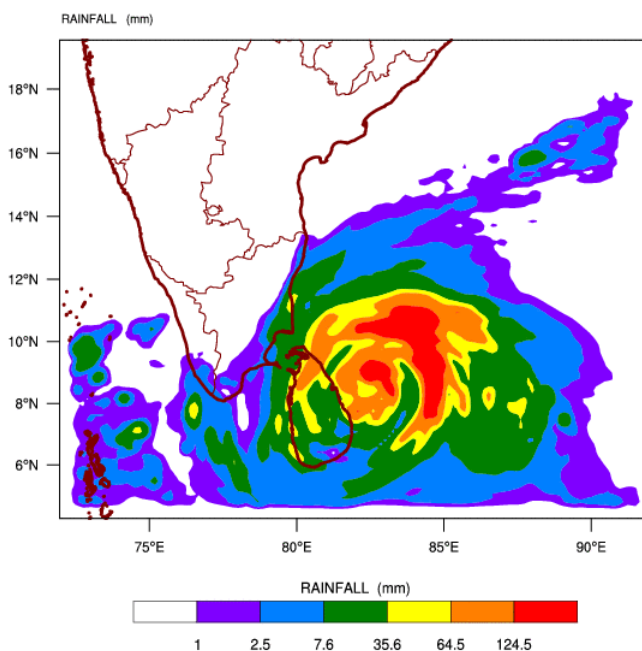
Source – NOAA Climate Prediction Center

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

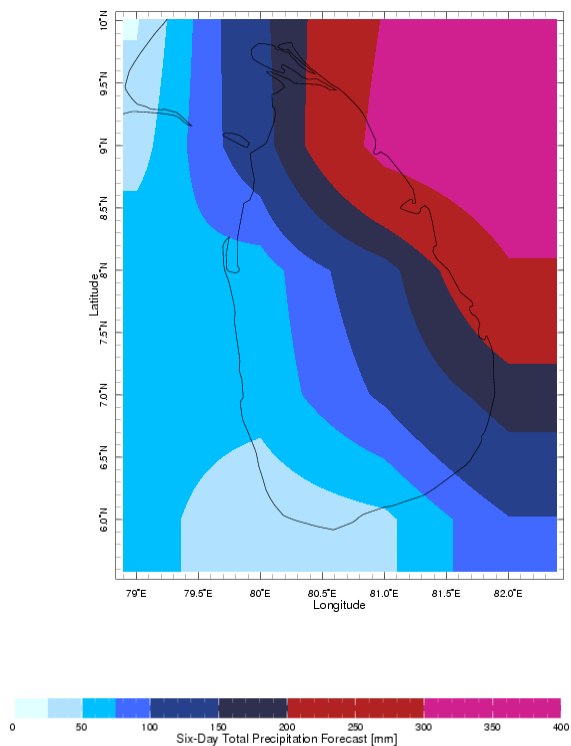
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 02-12-2013 valid for 03 UTC of 04-12-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 02-12-2013 valid for 03 UTC of 05-12-2013



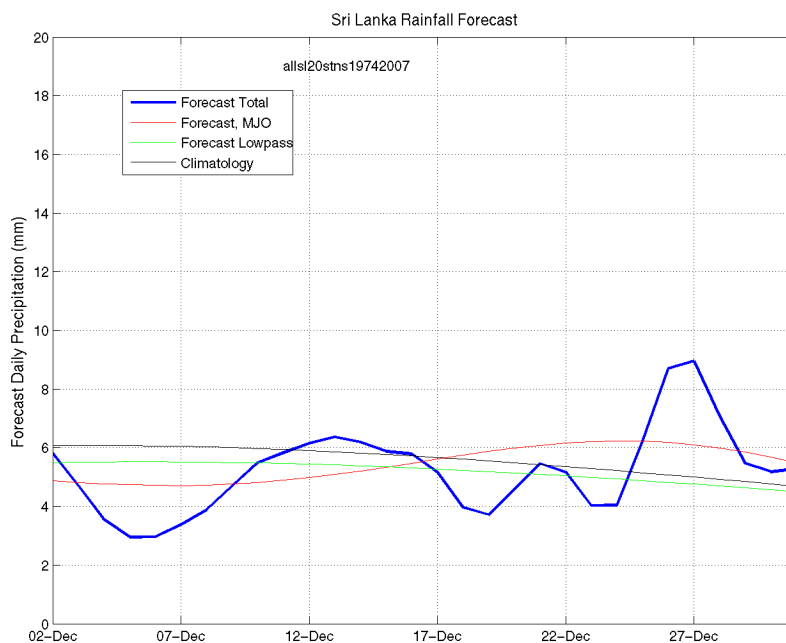
**c) Weekly Precipitation Forecast for 3<sup>rd</sup>-8<sup>th</sup> December 2013 (Precipitation Forecast in Context Map Tool, IRI)**



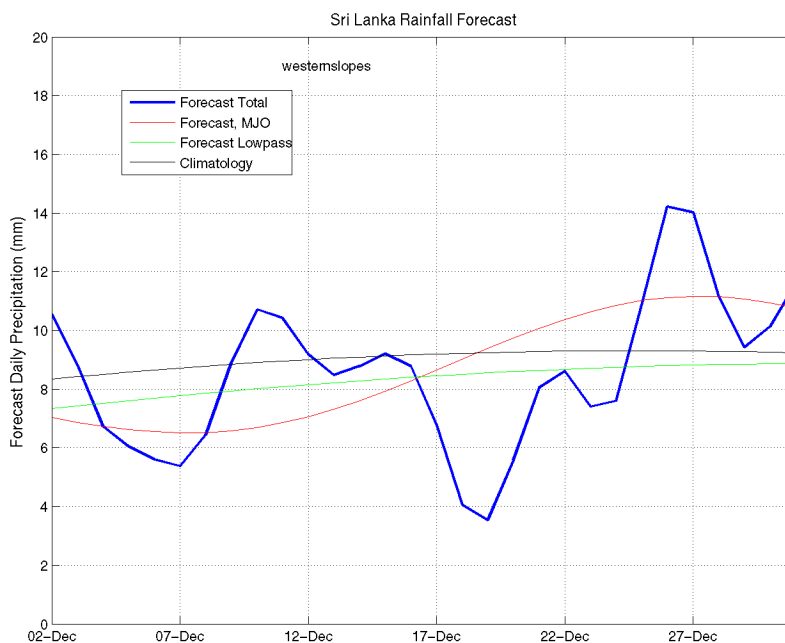
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 3<sup>rd</sup> December, 2013

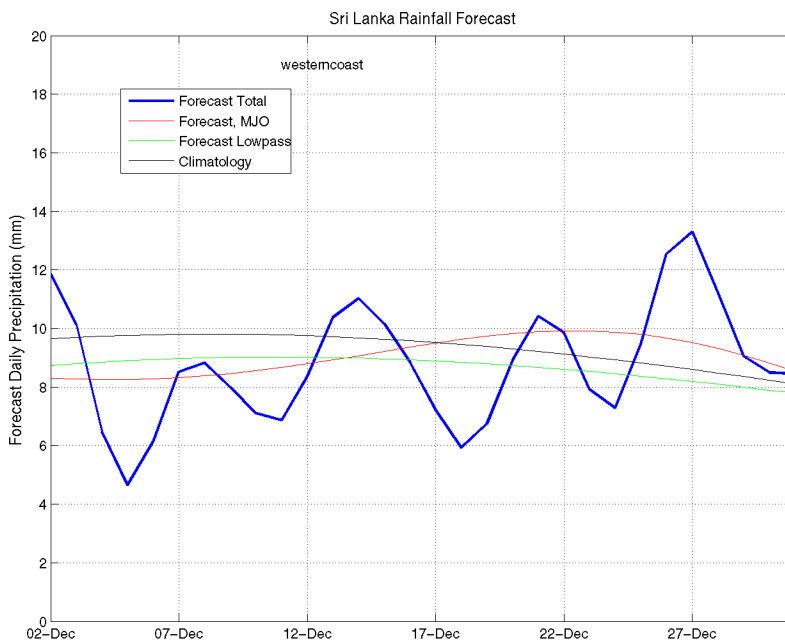
**All Sri Lanka (Rainfall Scale from 0-20mm/day)**



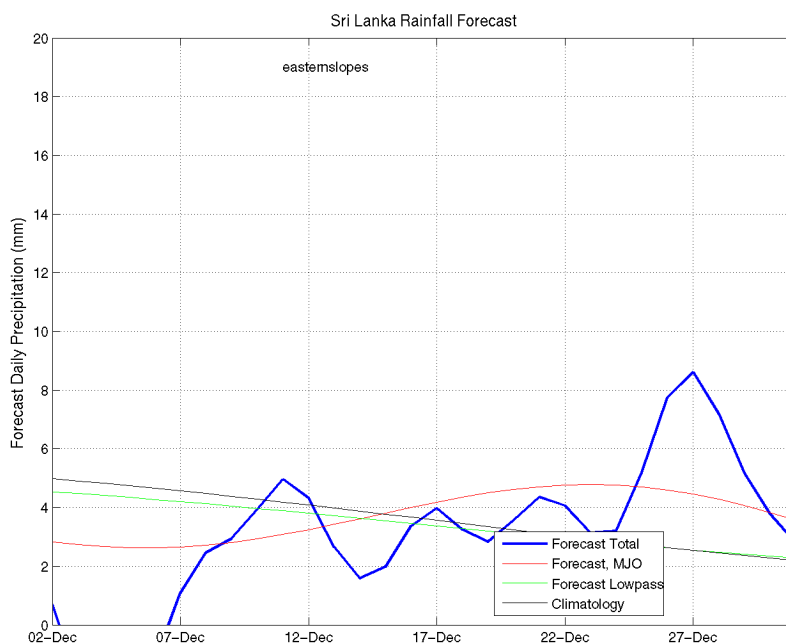
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



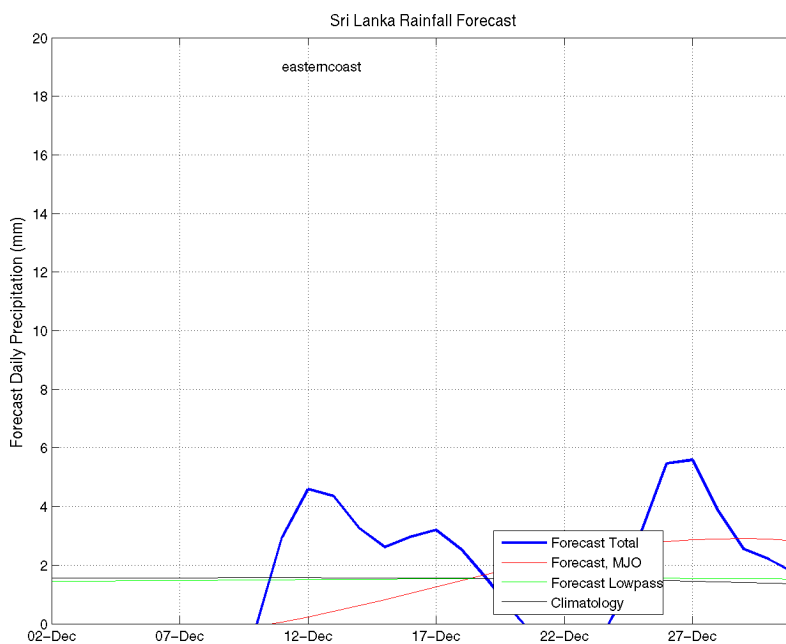
**Western Coast (Rainfall Scale from 0-20 mm/day)**



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

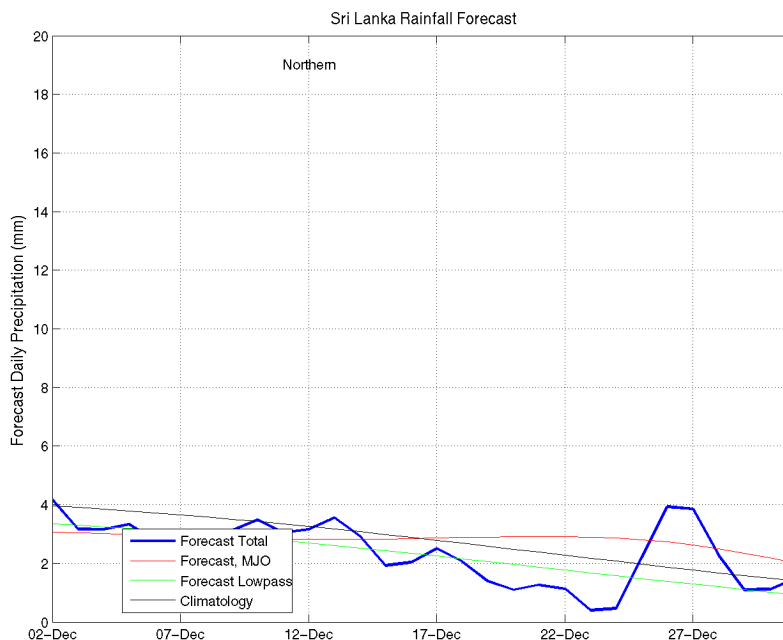


**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**

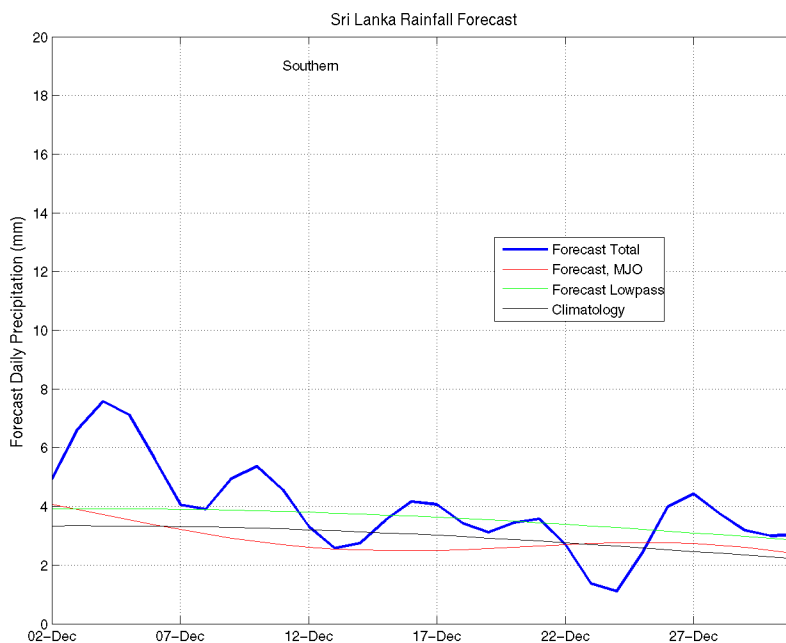




## Northern Region (Rainfall Scale- from 0-20 mm/day)

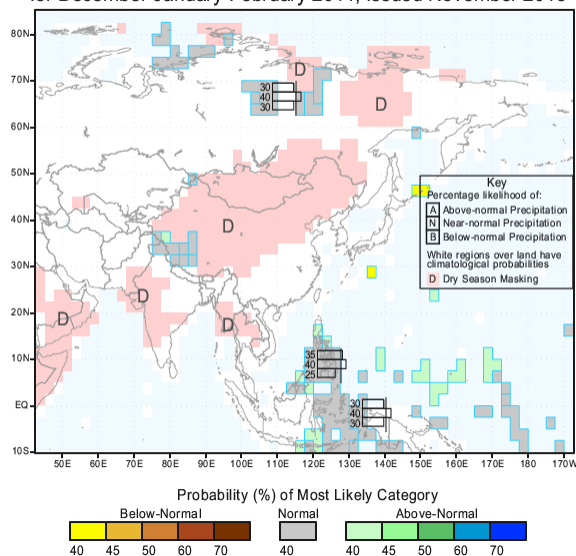


## Southern Region (Rainfall Scale- from 0-20 mm/day)



## e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation  
for December-January-February 2014, Issued November 2013



IRI Multi-Model Probability Forecast for Temperature  
for December-January-February 2014, Issued November 2013

