

Experimental Climate Monitoring and Prediction

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Lareef Zubair and Michael Bell (FECT and IRI¹)

13 December 2012

FECT BLOG

Past reports available at
<http://fectsl.blogspot.com/>

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FECT WEBSITES

<http://www.climate.lk>

and

<http://www.tropicalclimate.org/>

PACIFIC SEAS STATE

December 6, 2012

Most of the ENSO prediction model predict a warm-neutral ENSO condition for the coming few months, lasting into early 2013. During early November the observed SST conditions have been above average, but in the ENSO neutral range.

(Text Courtesy IRI)

INDIAN OCEAN STATE

October 18, 2012

The tropical Indian Ocean shows unusually warm anomalies in the Arabian Sea and at the same latitudes to South of the Equator. The Indian Ocean Dipole shows a warm positive phase. These are likely to alter climate drastically.

Highlights

Monitoring and Predictions:

Rainfall accumulation of upto 135 mm is expected for the 12-18th in the eastern sea board. The monthly predictions point to high rainfall between 16-21st of December in the Western slopes but lower amounts in the rest of the country.

Summary

Monitoring

Weekly Monitoring: During 4th-11th December, rainfall ranged between 5-145 mm with highest amount of precipitation observed in Polonnaruwa district on the 5th December. More or less entire country received rainfall on 6th December. During 10th-11th rainfall was not observed for Sri Lanka.

Monthly Monitoring: In October, entire Sri Lanka received above average rainfall. Entire country received more than 100 mm of above average rainfall per month and except for South eastern regions of the island; received 5-80 mm of above average rainfall per month.

Predictions

7-day prediction: During this week, East and South-east regions shall receive more than 135 mm rainfall and rainfall shall spreads westward in a reducing pattern.

IMD WRF Model Forecast & IRI forecast: For the 14th and 15th December, IMD WRF model predicts less than 2.5 mm of rainfall for the Galle district. On 15th IMD WRF model predicts less than 7.6 mm of rainfall for the eastern province. NOAA models forecast mild rainfall for the entire country for the period of 11th-16th December.

1 Month Prediction: Overall- Rainfall shall increase gradually during 13th-16th and it shall decrease till 18th. Rainfall shall increase again during 18th-20th and shall decrease drastically till 24th. **Western Slopes-** Rainfall shall increase gradually during 13th-16th and it shall shows constant during 16th-17th. Thereafter rainfall shall decrease till 18th and again it shall remain constant during 18th-19th. Rainfall shall increase during 19th-20th and decrease drastically till 22nd. During 22nd-26th rainfall shall increase gradually. **Eastern slopes-** Rainfall shall increase gradually during 13th-16th and it shall decrease drastically till 18th. Again it shall increase again during 18th-21st and shall decrease gradually till 24th. **Northern-** Rainfall shall increase gradually during 13th-16th and it shall decrease till 19th. Rainfall shall increase again during 19th-21st and shall decrease till 26th.

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

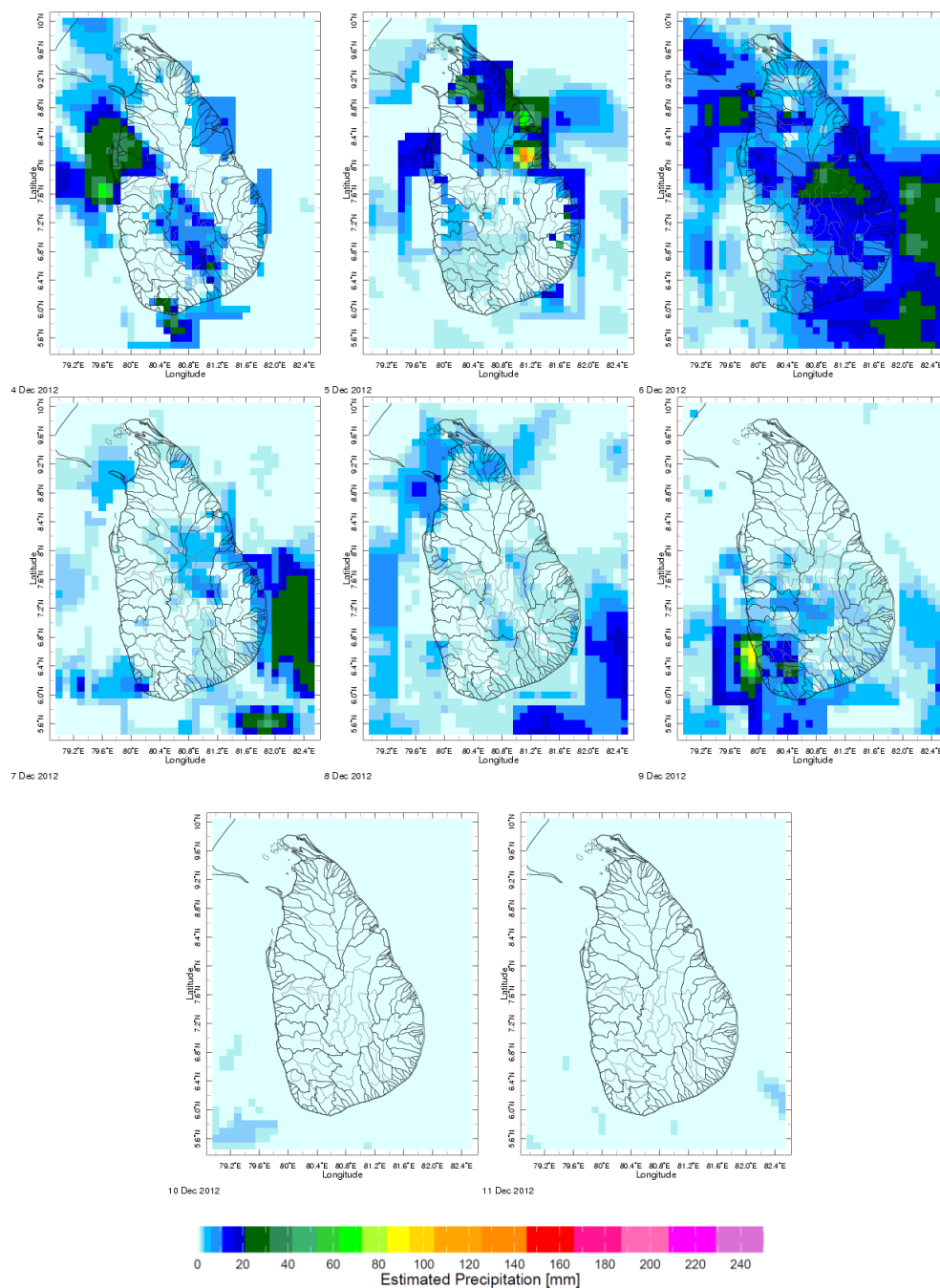
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

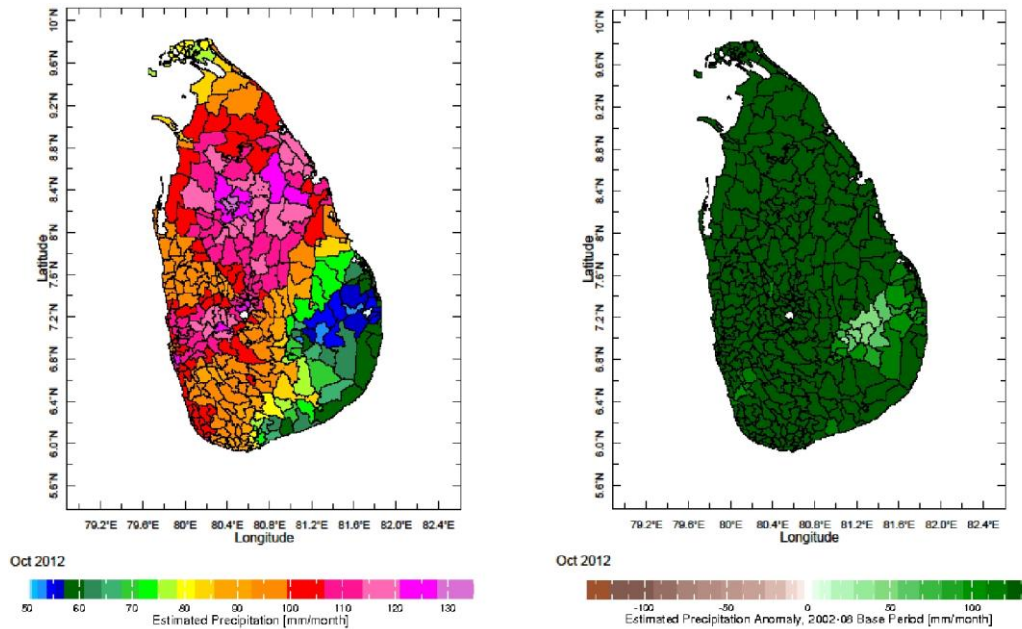
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

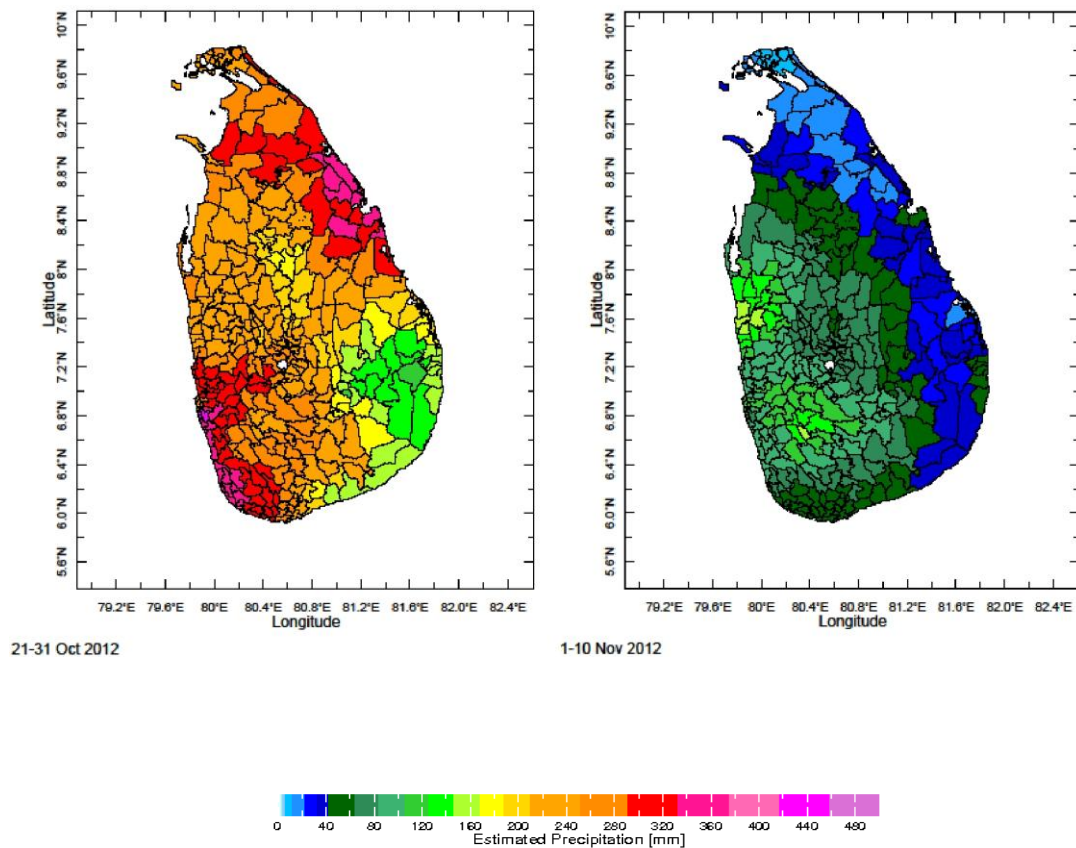
a) Daily Satellite Derived Rainfall Estimate Maps: 4th December – 11th December, 2012 (Left-Right, Top-Bottom)



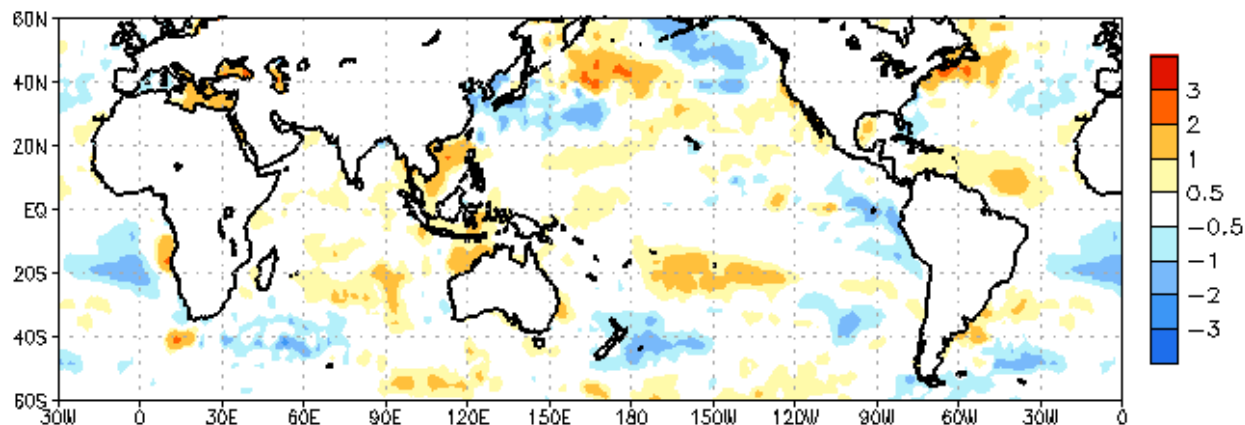
b) Monthly Satellite Derived Rainfall Estimates for October 2012 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 October & 1-10 November, 2012)



d) Weekly Average SST Anomalies

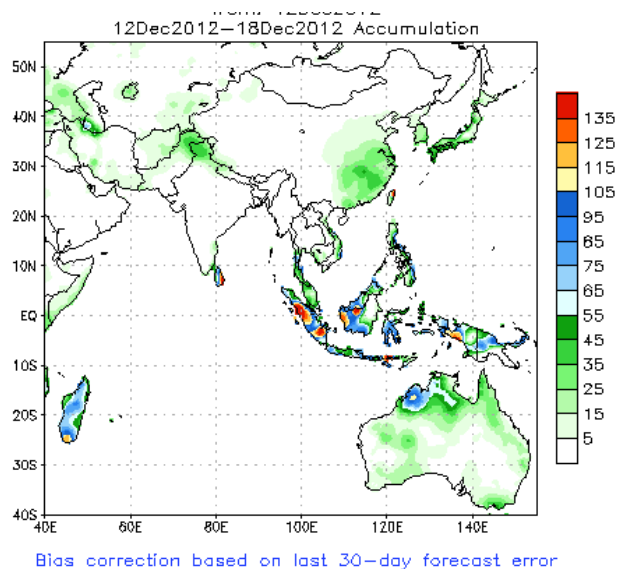


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 5th December, 2012

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

2. Predictions

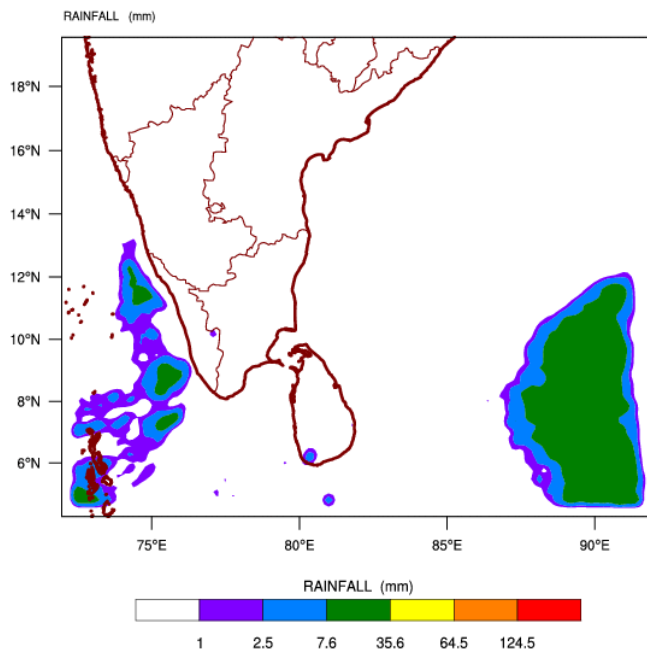
a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.



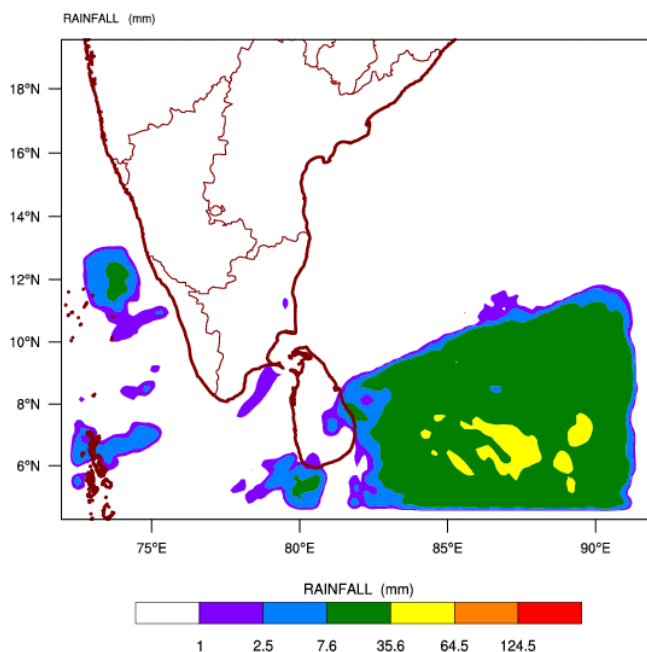
Source – NOAA Climate Prediction Center

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

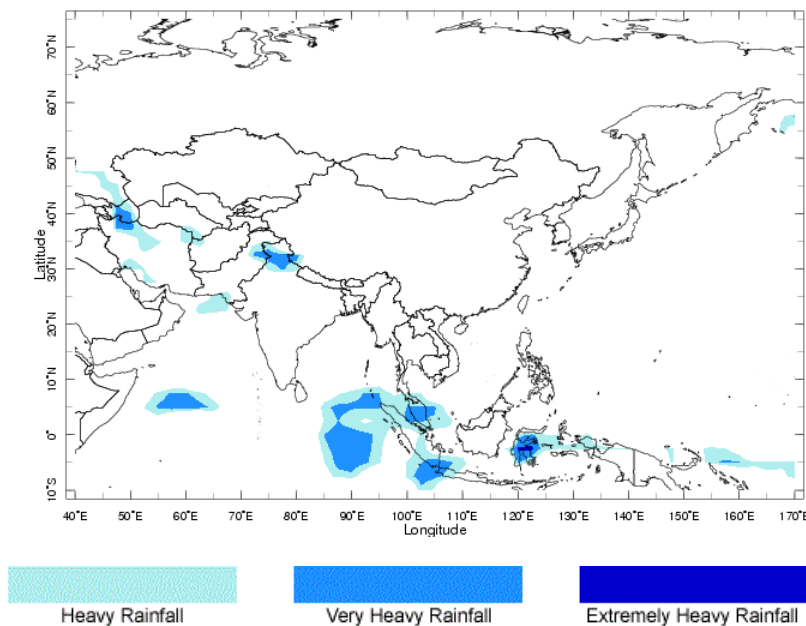
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 12-12-2012 valid for 03 UTC of 14-12-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 12-12-2012 valid for 03 UTC of 15-12-2012



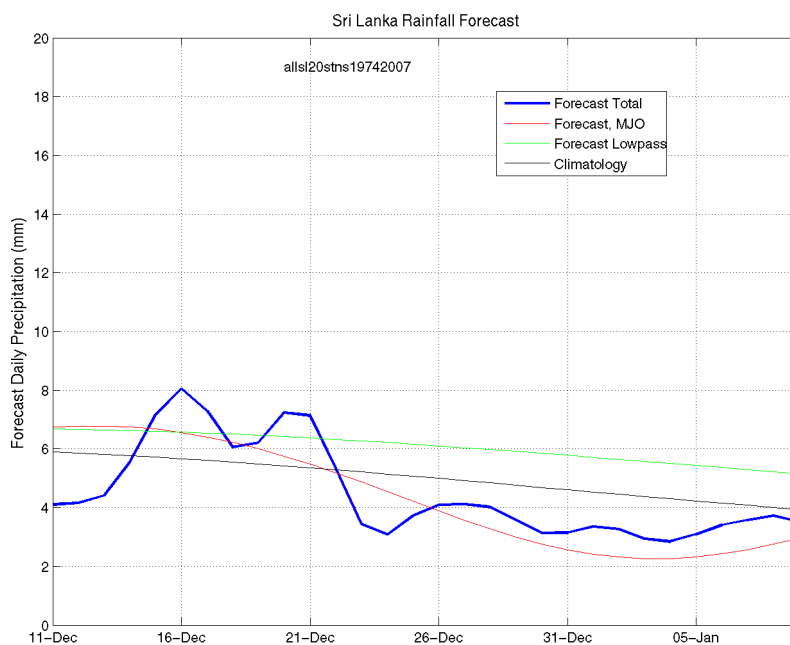
c) Weekly Precipitation Forecast for 11th-16th December 2012 (Precipitation Forecast in Context Map Tool, IRI)



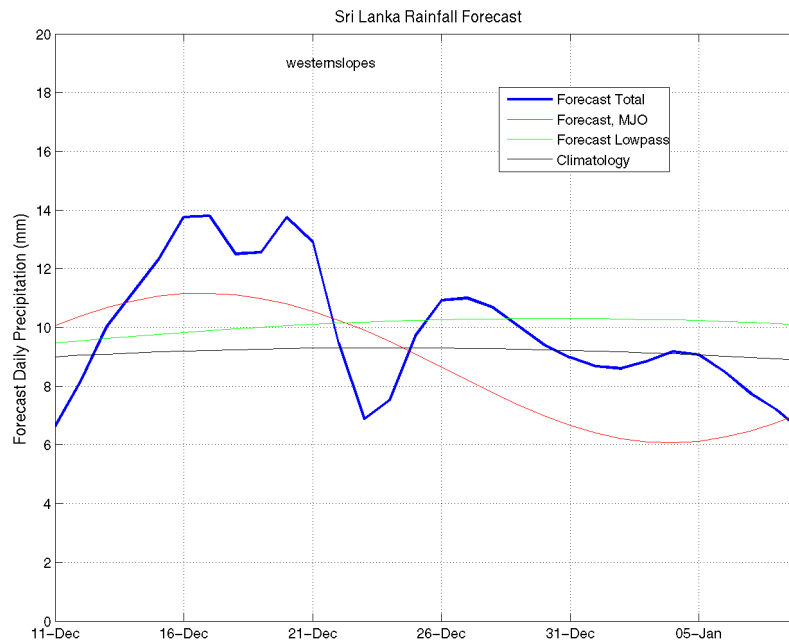
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 13th November, 2012

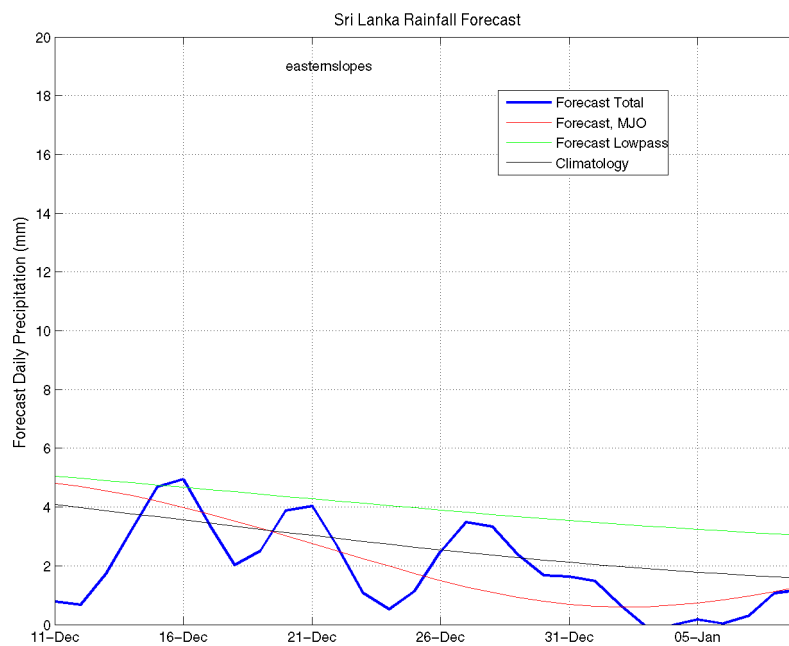
All Sri Lanka (Rainfall Scale from 0-20mm/day)



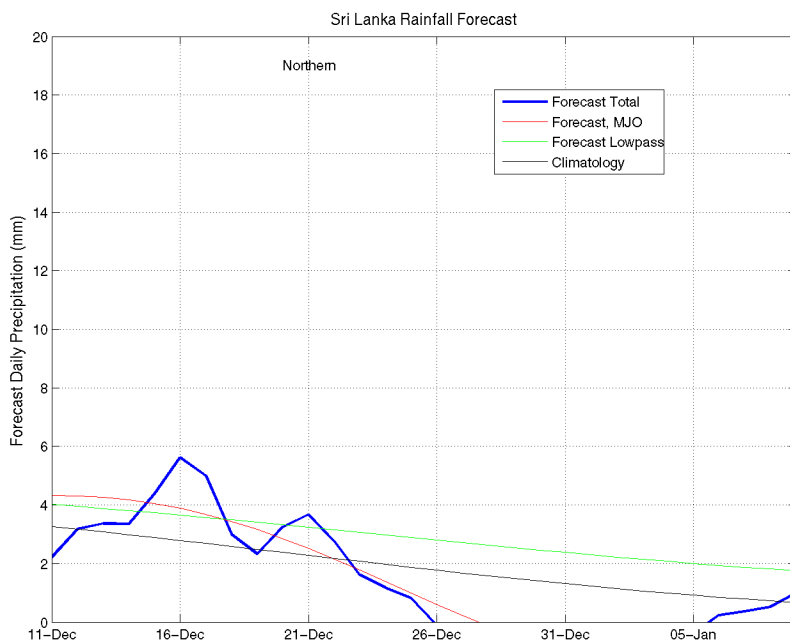
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

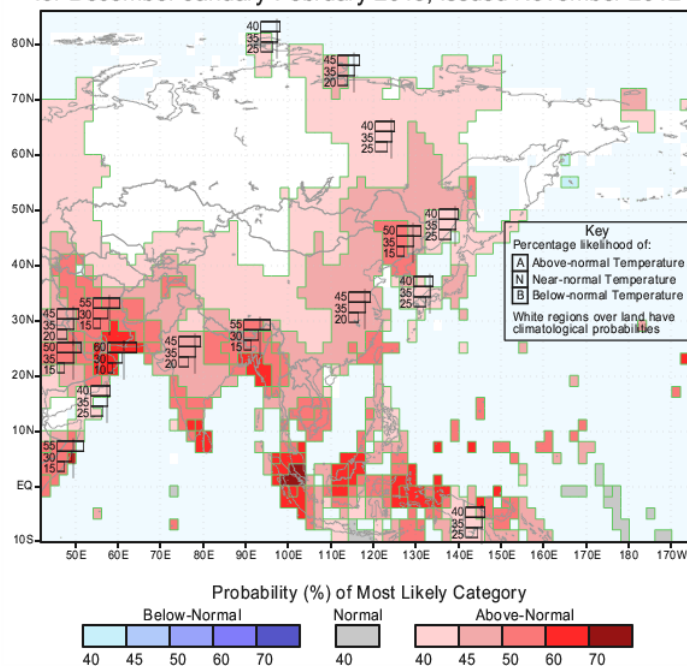


Northern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

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



d) Seasonal Rainfall and Temperature Predictions from IRI Cntd...

