

Experimental Climate Monitoring and Prediction

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Lareef Zubair and Michael Bell (FECT and IRI¹)

11 November 2012

FECT BLOG

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

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PACIFIC SEAS STATE

October 18, 2012

More than 80% of the ENSO prediction models predict El Nino SST conditions during the September- November season, continuing into Northern winter 2012-13. Among those predicting El Nino, very few predict more than a weak event.
(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

Monitoring: During the last week (31st October-6th November), heavier than usual rainfall (upto 165 mm) was received particular in the South-West. **Predictions:** In the coming week, rainfall of up to 135 mm is expected with less in the North. The El Nino is weakening but the Indian Ocean Dipole continues to favour heavier than normal rainfall till December.

Summary

Monitoring

Weekly Monitoring: During 31st October-6th November, Rainfall ranged between 0-165 mm with highest amount of precipitation observed in Colombo district on the 31st of October 2012. On 31st October and 1st November entire Island received heavy rainfall between 5-165 mm. On 2nd and 3rd, rainfall was lowest compared to the rest of the days of the week. During 4th-6th 5-70 mm of rainfall was observed for the entire country.

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, entire Sri Lanka shall receive more than 135 mm rainfall except for the Jaffna peninsula and South-eastern regions of the island shall receive 65-105 mm rainfall

IMD WRF Model Forecast & IRI forecast: Updates of IMD WRF model predictions are not available at this time. NOAA models forecast less than 50 mm of rainfall for the Northern regions of Sri Lanka and rest of the island shall receive 50-75 mm of rainfall.

1 Month Prediction: Overall- During 9-11th November rainfall shall increase and shall decrease gradually till 18th. Thereafter rainfall shall increase gradually till 29th November.

Western Slopes- Same rainfall pattern shall exists till 18th November. Thereafter rainfall shall increase gradually till 25th and shall decrease during 25th-28th November. **Eastern slopes-** Rainfall shall increase during 8th-10th and it shall drastically decrease till 15th November. Thereafter it shall gradually increase till 29th November with fluctuations during 17th-19th and 25th-26th. **Northern-** Rainfall shall increase during 8th-11th and it shall decrease gradually till 19th with fluctuation during 14th-15th. Thereafter rainfall shall increase gradually till the end of November.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for November 2012 to January 2013, issued in October 2012, there is a 50%-60% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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

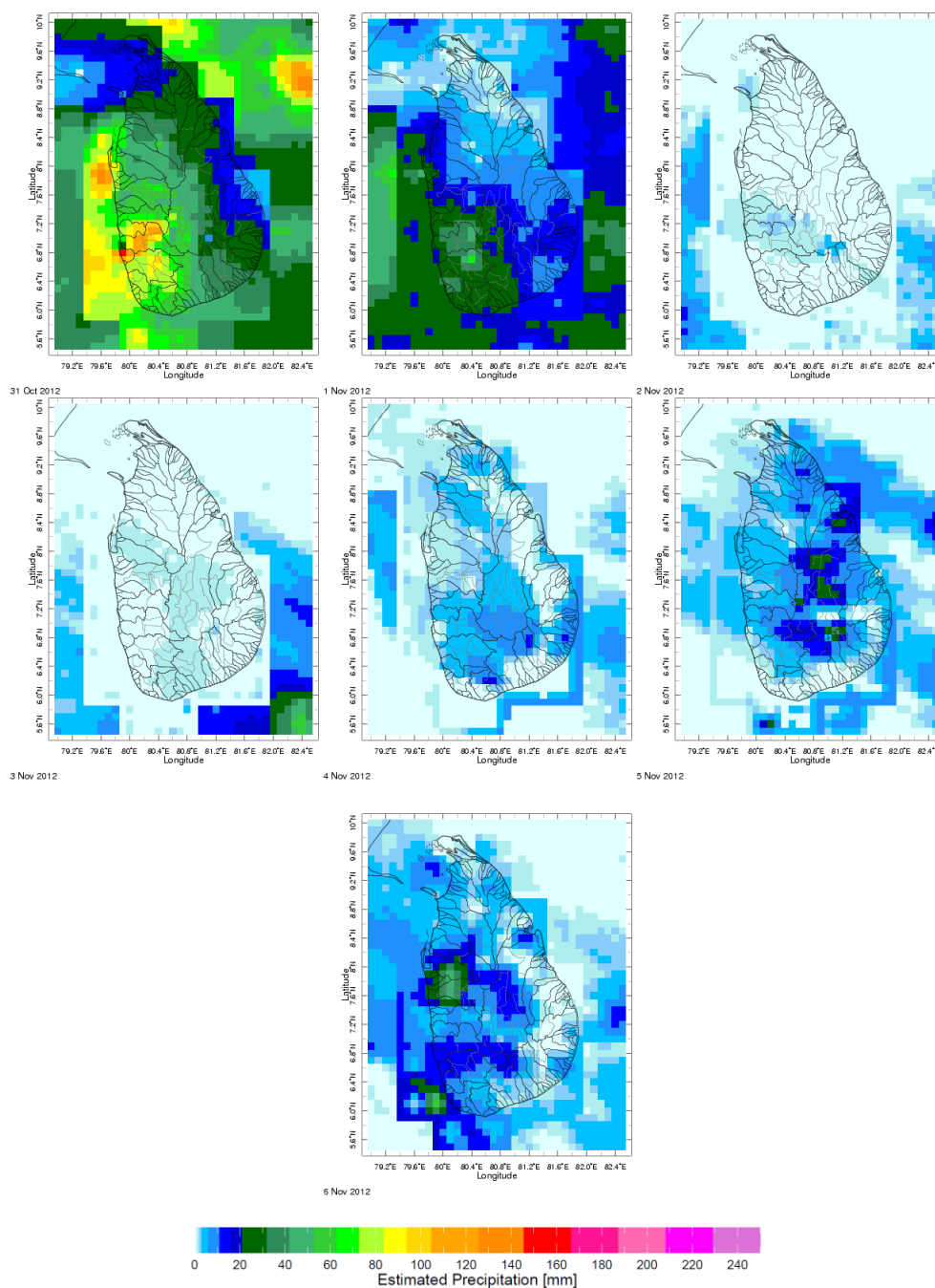
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

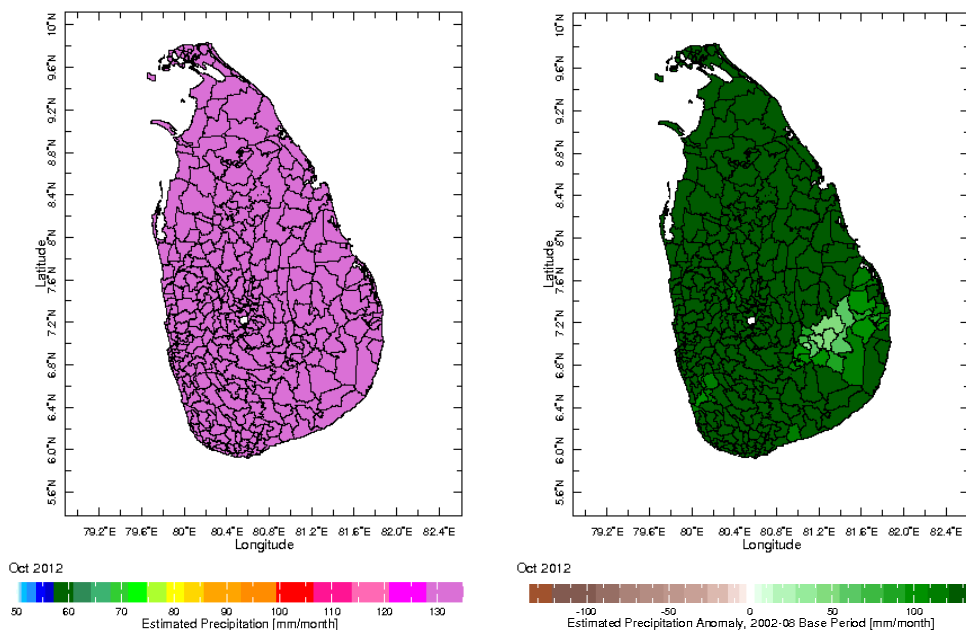
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

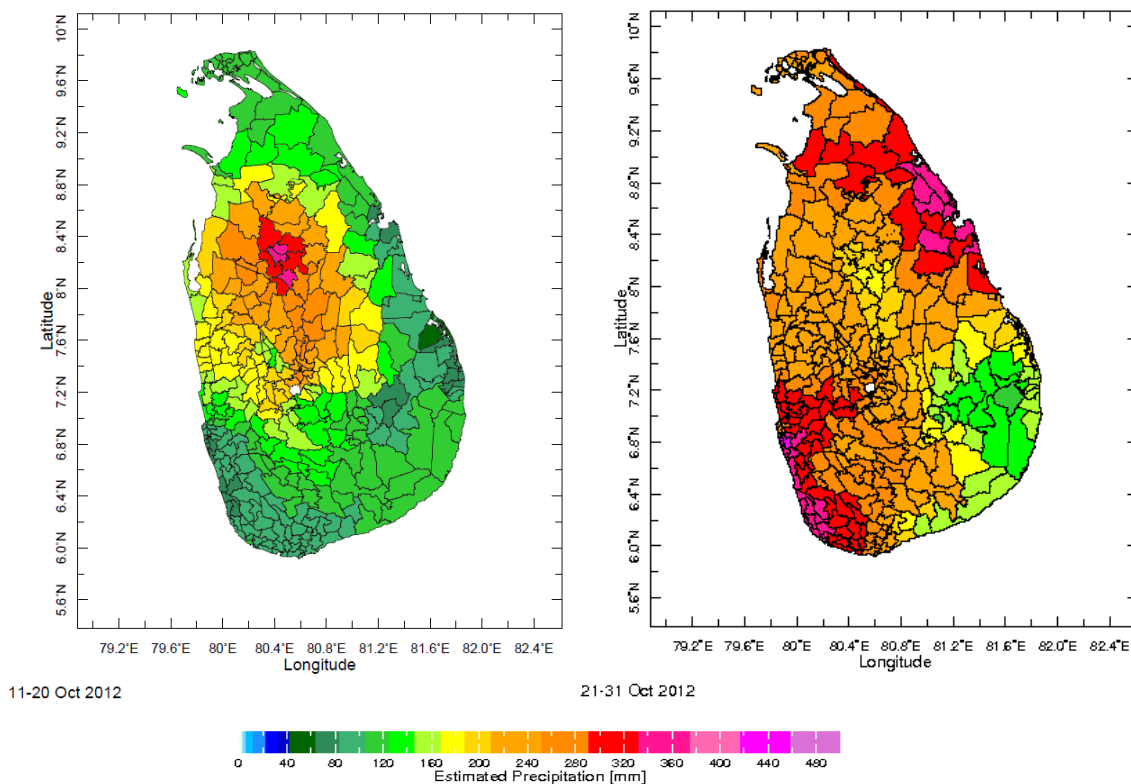
a) Daily Satellite Derived Rainfall Estimate Maps: 31st October – 06th November, 2012 (Left-Right, Top-Bottom)



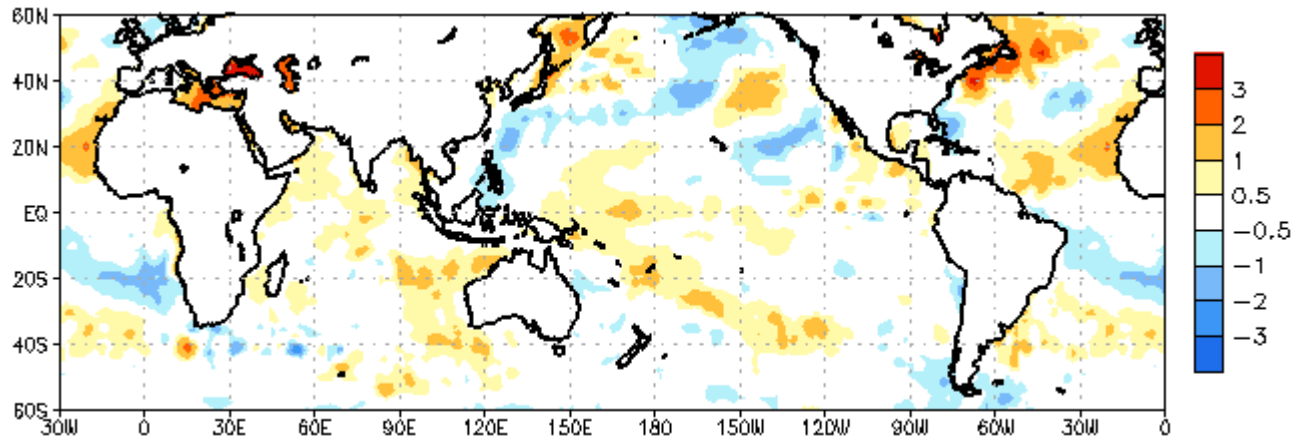
b) Monthly Satellite Derived Rainfall Estimates for October 2012 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 & 21-31 October, 2012)



d) Weekly Average SST Anomalies

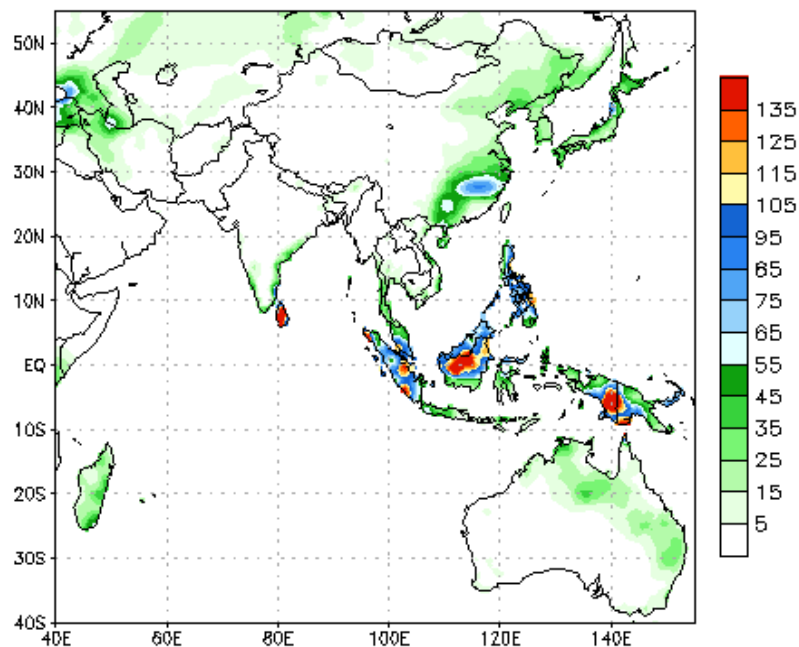


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 31st October, 2012

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

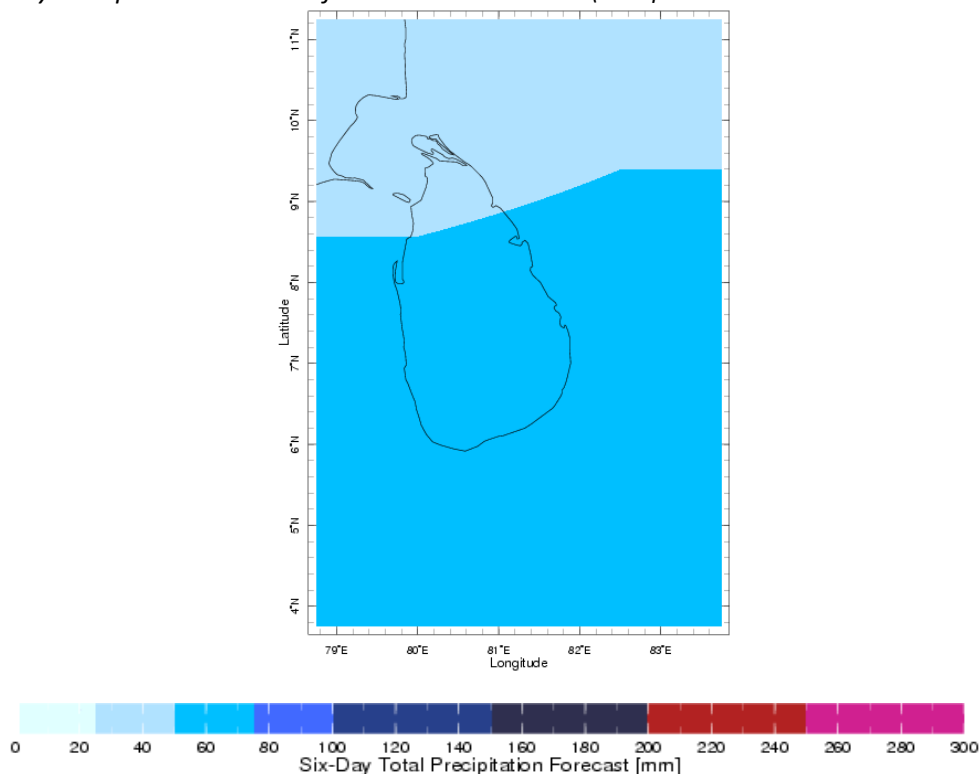
2. Predictions

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



Source – NOAA Climate Prediction Center

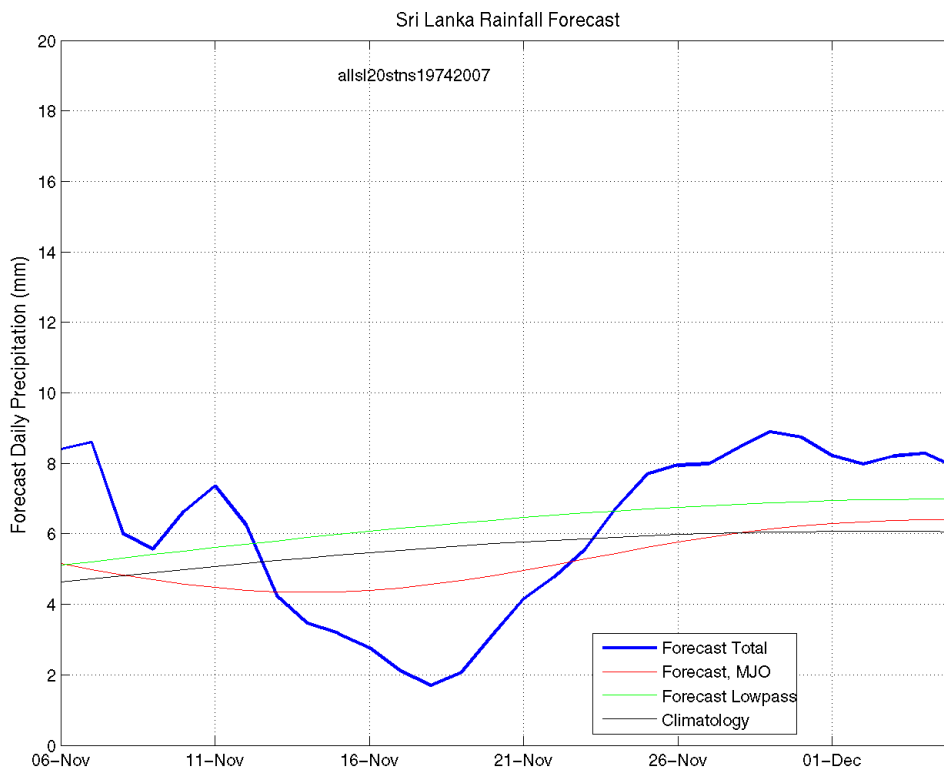
b) Weekly Precipitation Forecast for 06th-11th Nov 2012 (Precipitation Forecast in Context Map Tool, IRI)



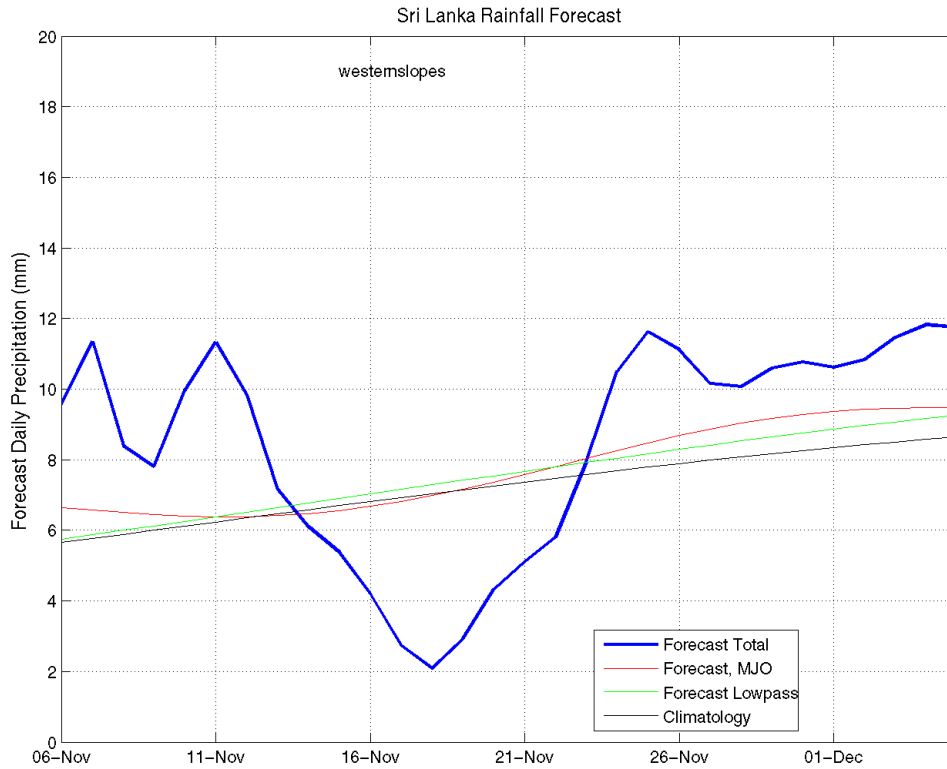
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 08th November, 2012

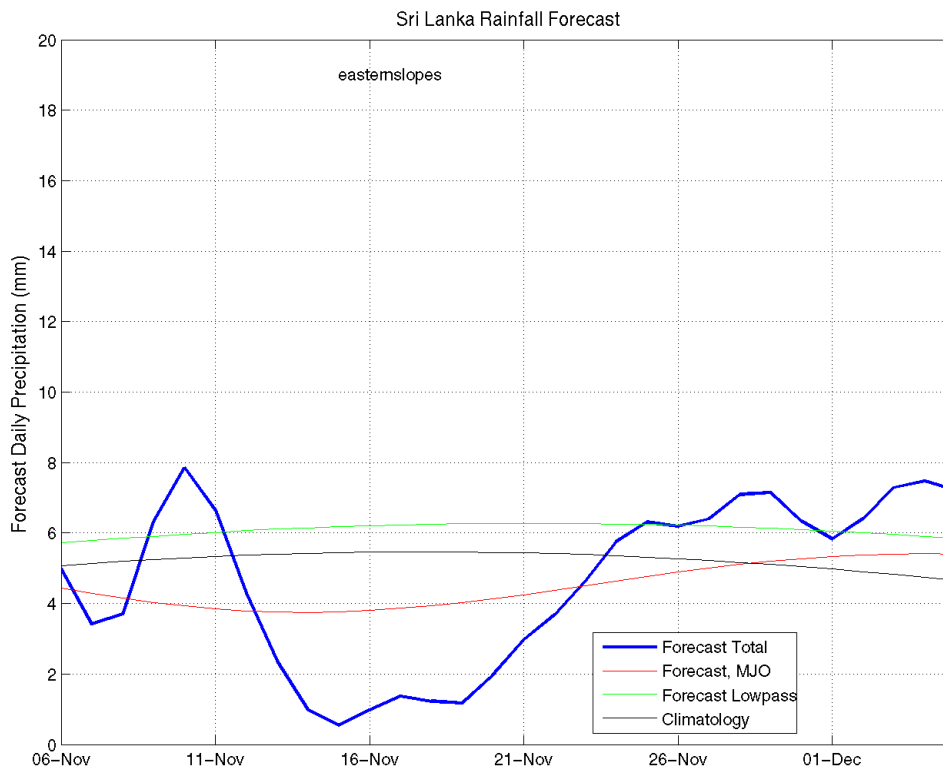
All Sri Lanka (Rainfall Scale from 0-20mm/day)



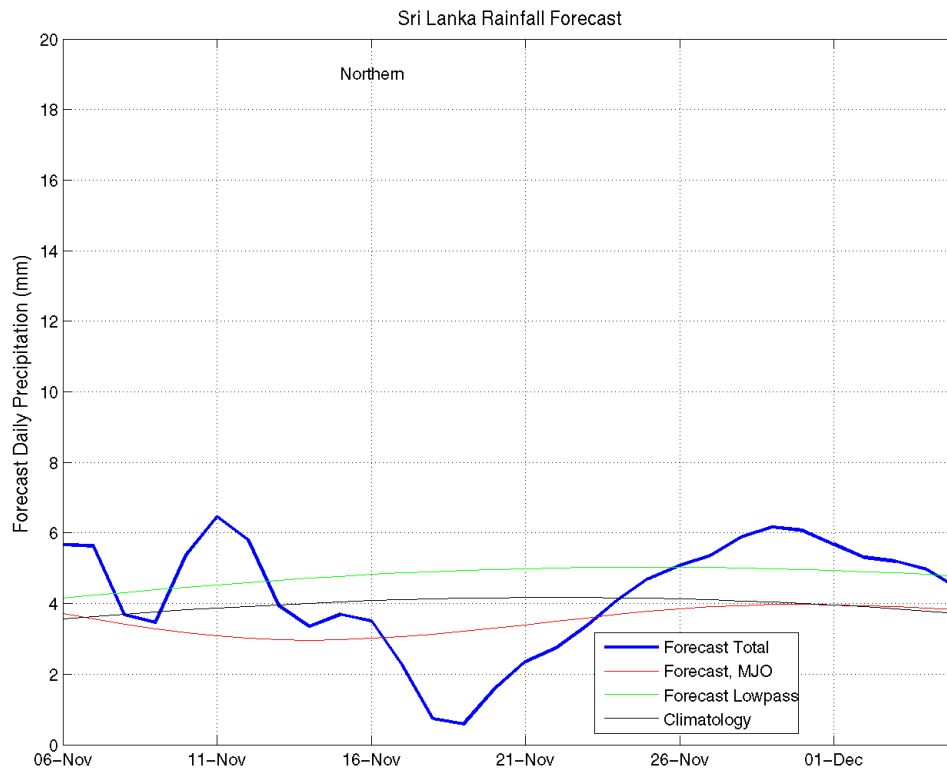
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

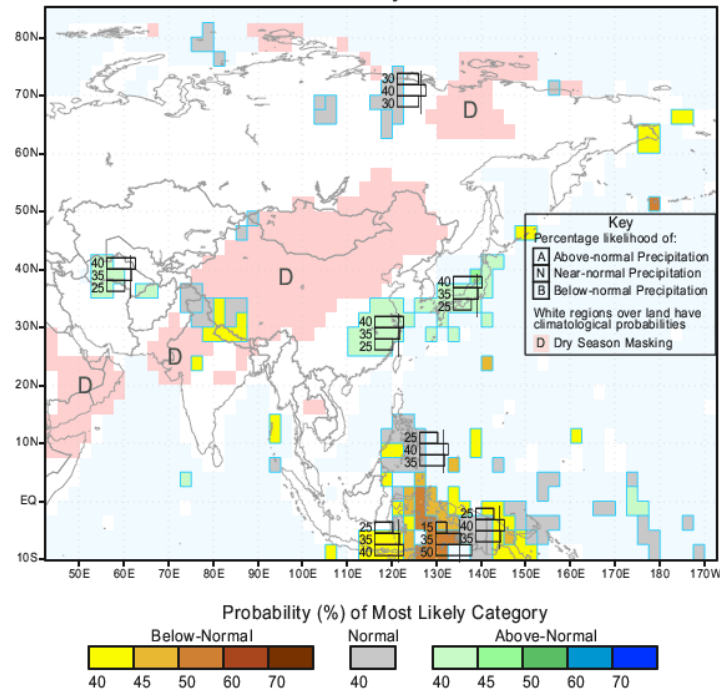


Northern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for November-December-January 2013, Issued October 2012



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

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

