

Experimental Climate Monitoring and Prediction

(Prepared for the Water Management Secretariat of the Mahaweli Authority)

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(FECT and IRI)

29 December 2011

FECT BLOG

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ENSO Update

15 December 2011

A majority of the ENSO prediction model call for a week or moderate strength La Nina to continue through the Northern Hemisphere winter 2011-2012 and begin gradually weakening after peaking during the December to January period.

(Text Courtesy IRI)

Summary² Monitoring

Weekly Monitoring: During first half of the previous week (22nd -24th December) high rainfalls, ranging between 5mm-140 mm were experienced particularly in the Eastern regions of the island, while the latter half was almost dry with low rainfall ranging between 0mm-10mm in a few places of the island.

Monthly Monitoring: During November above average rainfall was experienced particularly in the Northern half of the country, Eastern, South Eastern and in the District of Galle. Most of this rain fell on the 3rd and last dekad of the month. The rainfall was below average in the rest of the country, particularly in the Kurunegala/Deduru Oya area.

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts low amount of accumulated rainfall ranging between 0mm-10mm over the island.

IMD WRF Model Forecast & IRI forecast WRF model also predicts no rainfall conditions for the entire island particularly for the coming two days, the 30th & 31st December. NOAA NCEP CFS model (delivered via IRI map tool) predicts 80mm-100mm of rainfall till the 1st of December while 50mm-80mm for the rest of the island.

1 Month Prediction: Overall, a decreasing trend in rainfall with fluctuations shall be expected during the coming month. *Western slopes-* A Rapid decrease in rainfall shall be observed till the 2nd of January. Thereafter it shall gradually increase for 3 days with minor fluctuations till the 9th of January. Again it shall decrease dramatically with minor fluctuations till the 17th. A rapid increase shall be observed after the 17th till the 27th of January. *Eastern slopes-* There shall be no high rainfall till the 7th January, and no rainfall is predicted for the rest of the month. *Northern region-* Overall a decreasing trend in rainfall shall be expected. A rapid decrease shall be observed till the 1st of January followed by a gradual increase till 5th of January. Again it shall follow a gradual decrease till the 14th. No rainfall is predicted from the 15th -21st of January.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for January 2012 to March 2012, issued in December 2011, there is 50%-80% probability for temperature to be normal for entire Sri Lanka, while 45%-50% the precipitation to be above normal.

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1. Monitoring

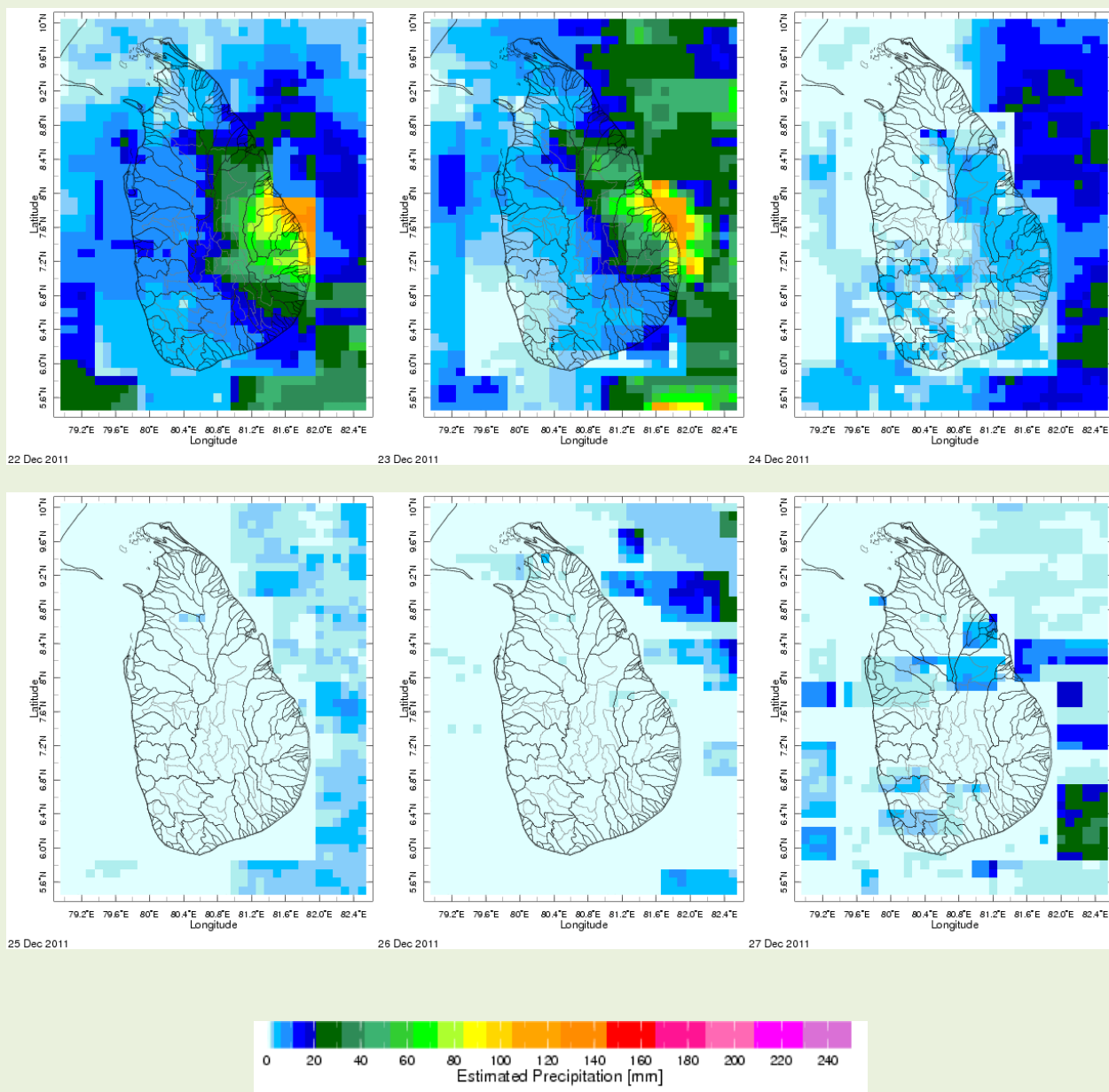
- Daily Satellite Derived Rain fall Estimates
- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

2. Predictions

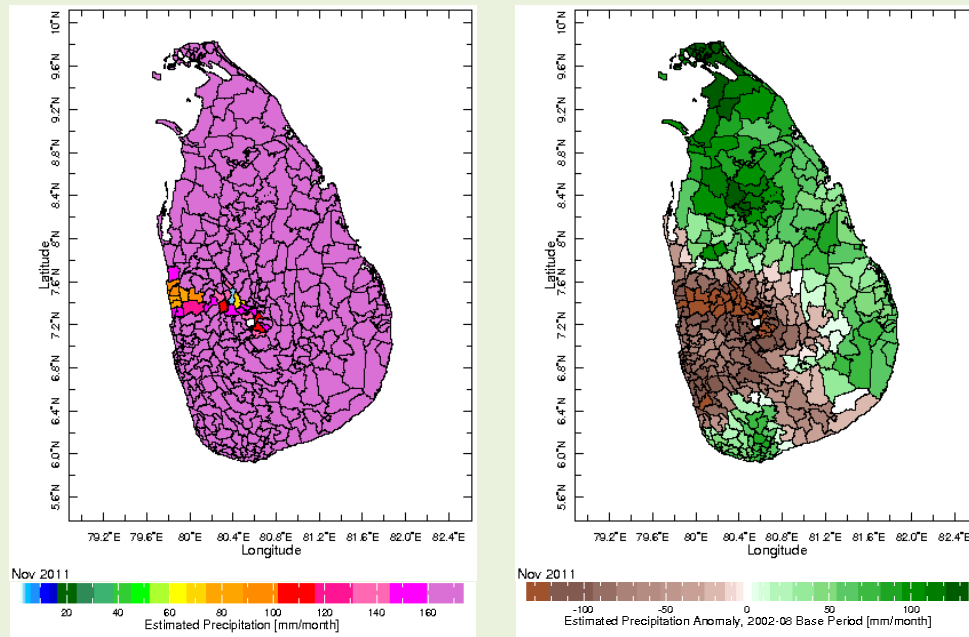
- NCEP GFS Ensemble 1-7 day predictions, NOAA, CPC,USA
- IMD WRF Model Forecast
- Weekly Precipitation Forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

1. Monitoring

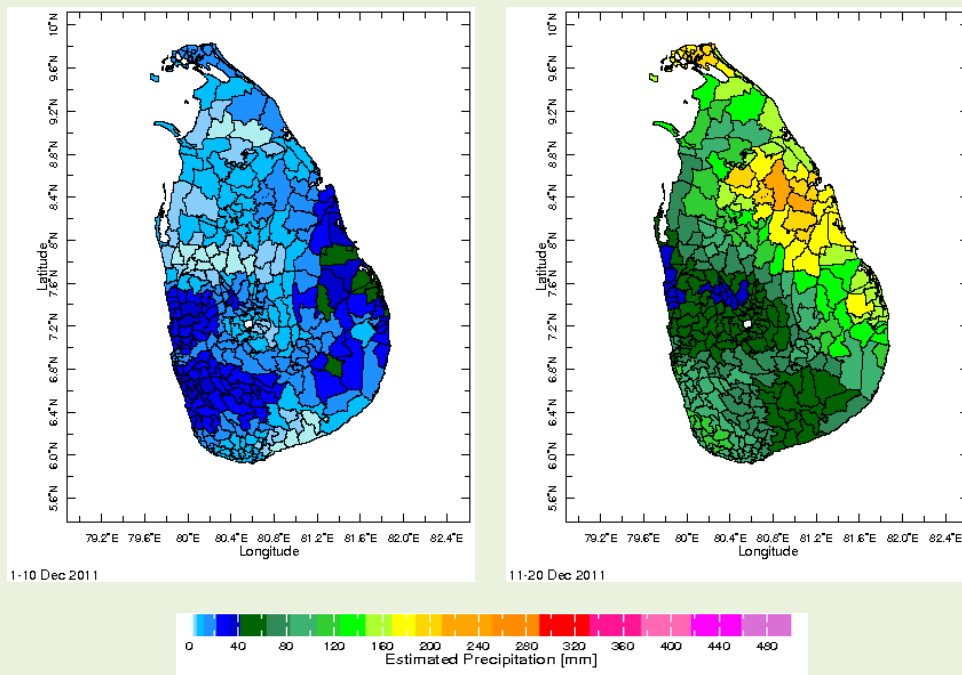
a) Daily Satellite Derived Rainfall Estimate Maps: 22nd December – 27th December, 2011 (Left-Right, Top-Bottom)



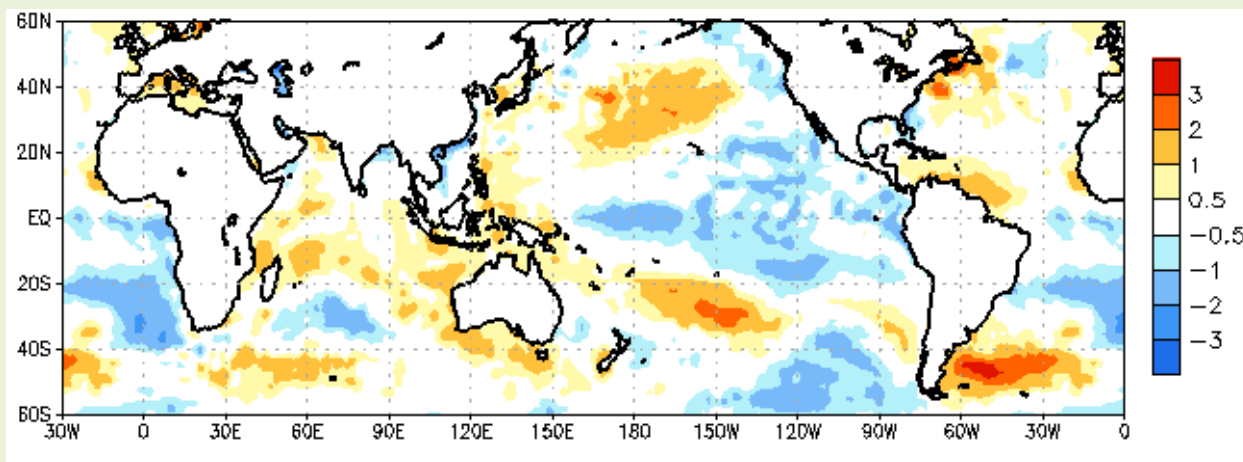
b) Monthly Satellite Derived Rain fall Estimates for November 2011 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (01-10 and 11-20 December, 2011)



d) Weekly Average SST Anomalies

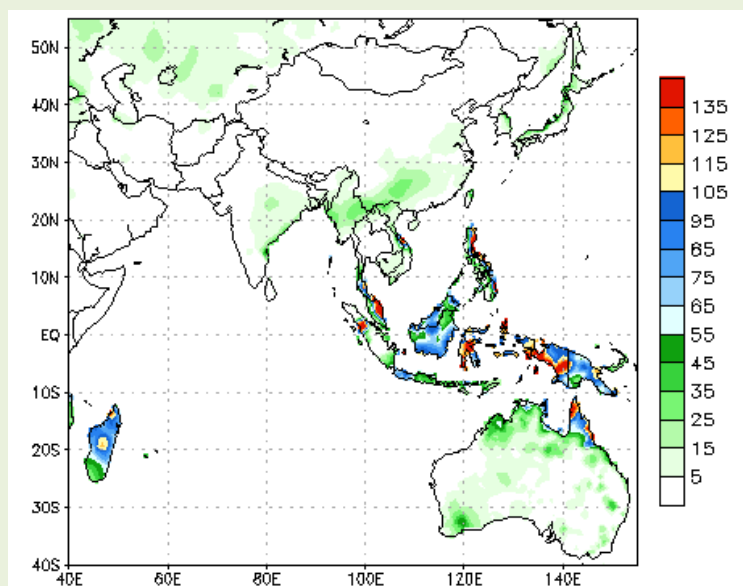


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 21st December, 2011

Data Source: NCEP Global Sea Surface Temperature Analysis (Climatology 1979-1995)

2. Predictions

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



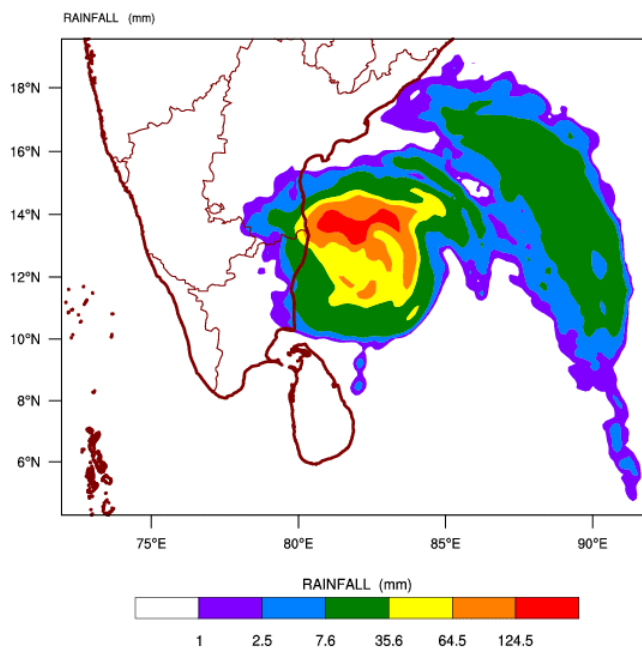
During next week, an accumulated rainfall of 0mm -5 mm is predicted for the entire Island.

Source – NOAA Climate Prediction Center

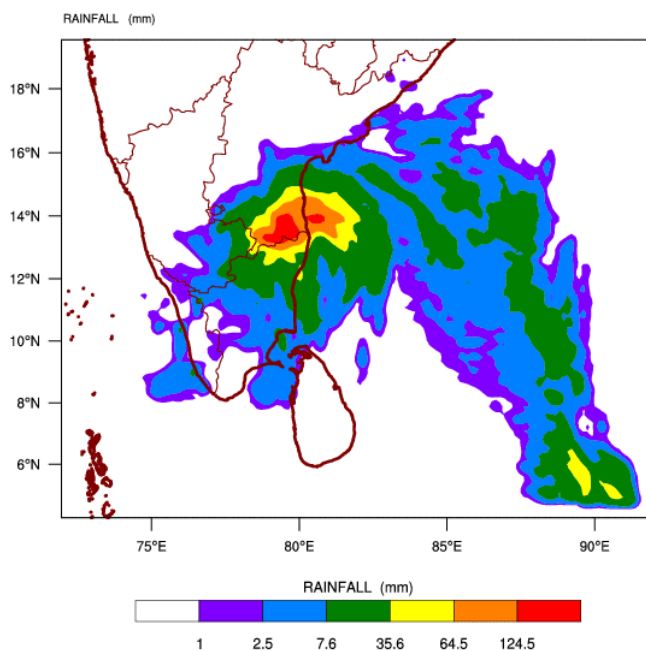
Map: Predicted accumulation of rainfall. (27th December 2011 – 02nd January, 2012 week)

b) WRF Model Forecast (Regional Meteorological Center, Chennai, Indian Meteorological Department)

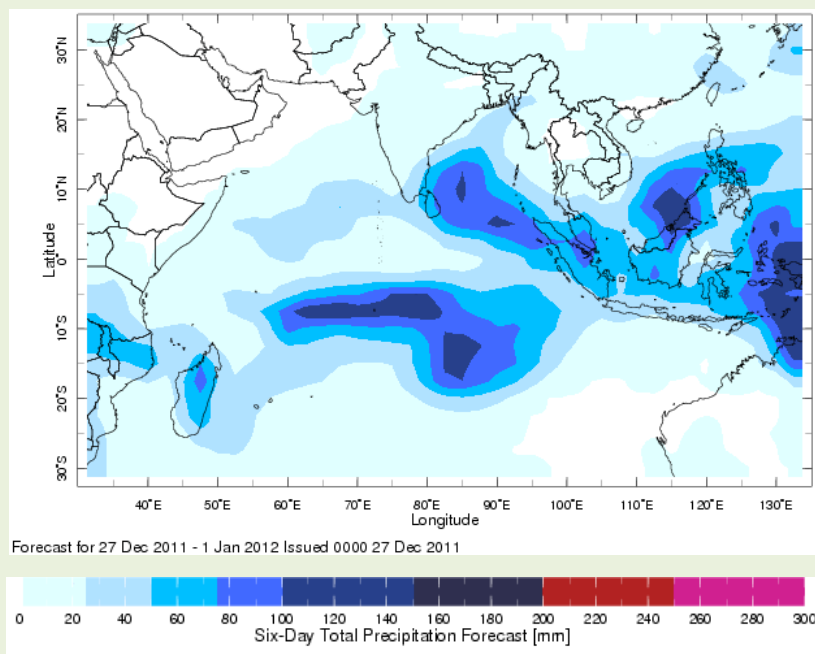
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 28-12-2011 valid for 03 UTC of 30-12-2011



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 28-12-2011 valid for 03 UTC of 31-12-2011



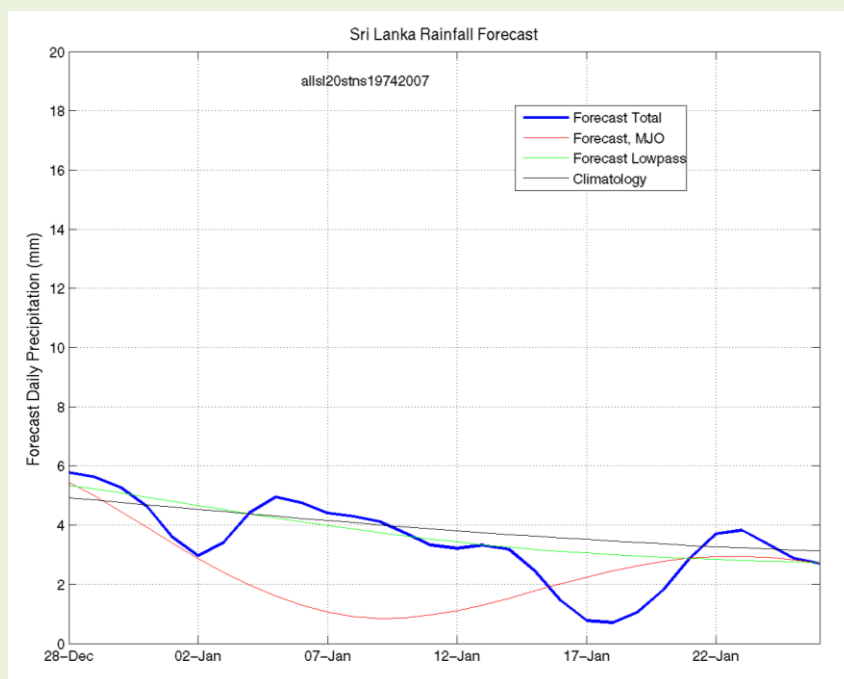
c) Weekly Precipitation Forecast for 27th Dec, 2011 – 1st Jan, 2012. (Precipitation Forecast in Context Map Tool, IRI)-Issued 27th December 2011



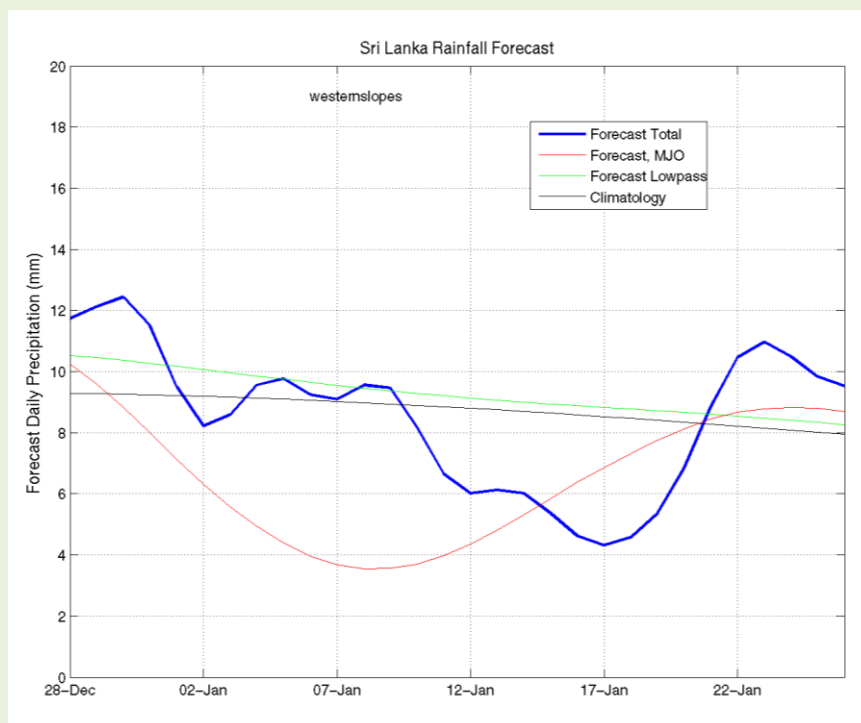
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 29th December, 2011

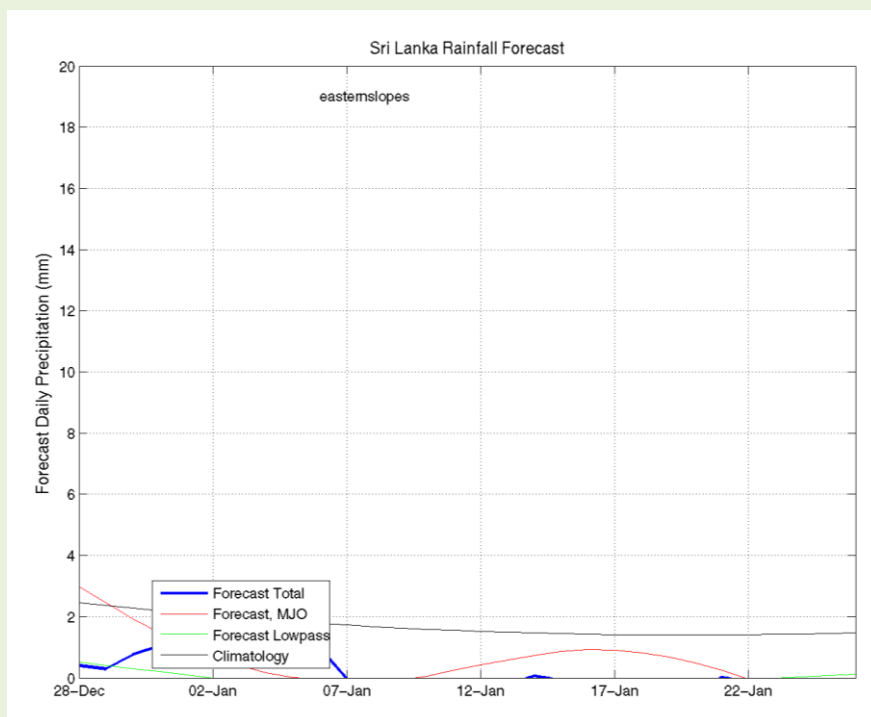
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



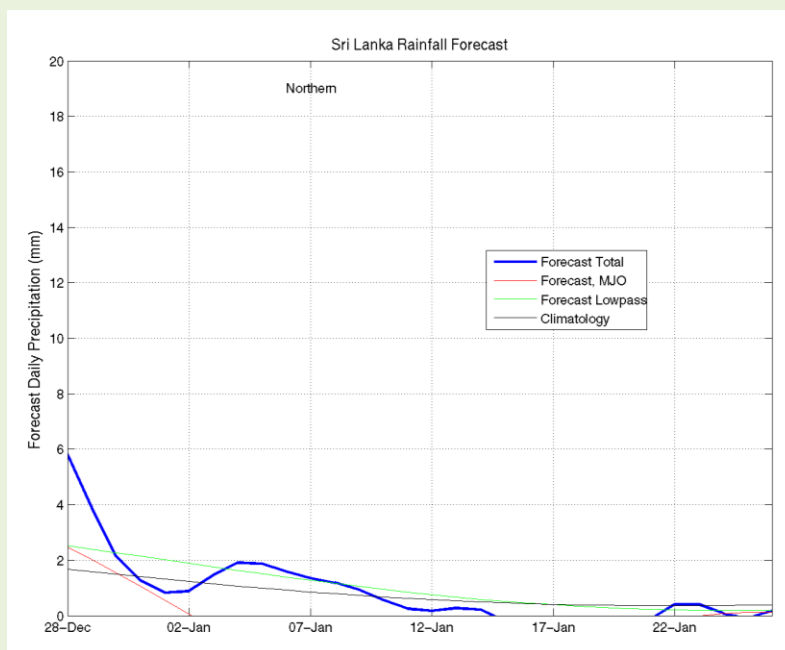
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

