

Experimental Climate Monitoring and Prediction

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

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(FECT and IRI)

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FECT BLOG

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ENSO Update

17 November 2011

Weak La Niña conditions re-emerged in August after a brief period of ENSO-neutral conditions following the ending of the significant 2010-II. The current event has slowly strengthened and is currently of weak to moderate strength.

(Text Courtesy IRI)

Summary² Monitoring

Weekly Monitoring: During the week of 06th to 13th December, 2011 rainfall ranged between 0-85 mm. On the 6th & 7th there was no rainfall compared to rest of the week. The entire country received rainfall from 11th to 13th and the maximum rainfall was observed on the 12th in the North Central province.

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

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts an accumulated rainfall of more than 135 mm particularly for Eastern half of the island.

IMD WRF Model Forecast & IRI forecast: WRF model predicts up to about 65mm of maximum rainfall for 16th and 17th December. For the 16th December it predicts 1-65 mm of rainfall for Eastern part which shall spread for the western, South Western, South Eastern and North Western regions by 17th December. NOAA NCEP CFS model predictions (delivered via IRI map tool) predict up to about 100mm rainfall for the entire island for the above period.

1 Month Prediction: Overall there shall be a decrease in rainfall upto the 20th December & then a gradual increase till the 26th of December. From 26th December to 12th January 2012 daily rainfall shall vary between 4-6 mm. *Western slopes-* Rainfall shall decrease drastically during 13th-19th December. Afterwards rainfall shall increase drastically till the 26th December. Thereafter rainfall shall vary between 8 mm-13 mm. *Eastern Slopes-* Rainfall shall rapidly decrease during 13th-14th December & shall increase drastically during 17th-19th December & thereafter rainfall is not predicted till 23rd December. After the 23rd of December daily rainfall shall vary between 0-2 mm. *Eastern Coast-* starting from 13th December rainfall shall decrease till 18th December. *Northern Region-* Rainfall shall decrease dramatically during the period of 13th- 20th December & shall increase till 26th December. Thereafter it shall slowly decrease.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for December 2011 to February 2012, issued in November 2011, there is 70% probability for temperature to be normal for entire Sri Lanka, while the precipitation is likely to be climatological.

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- IMD WRF Model Forecast
- Weekly Precipitation Forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

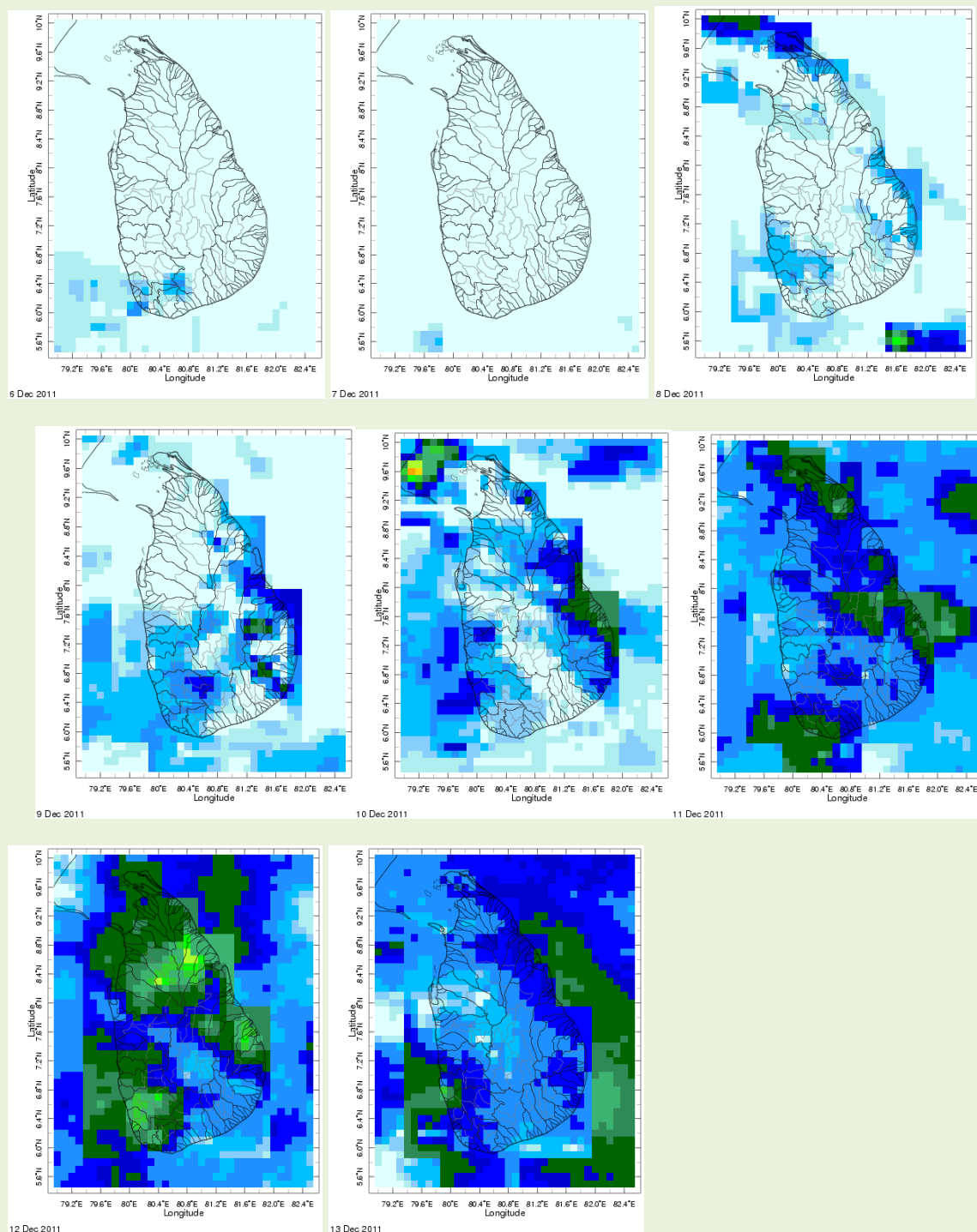
International Research Institute for Climate and Society.

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

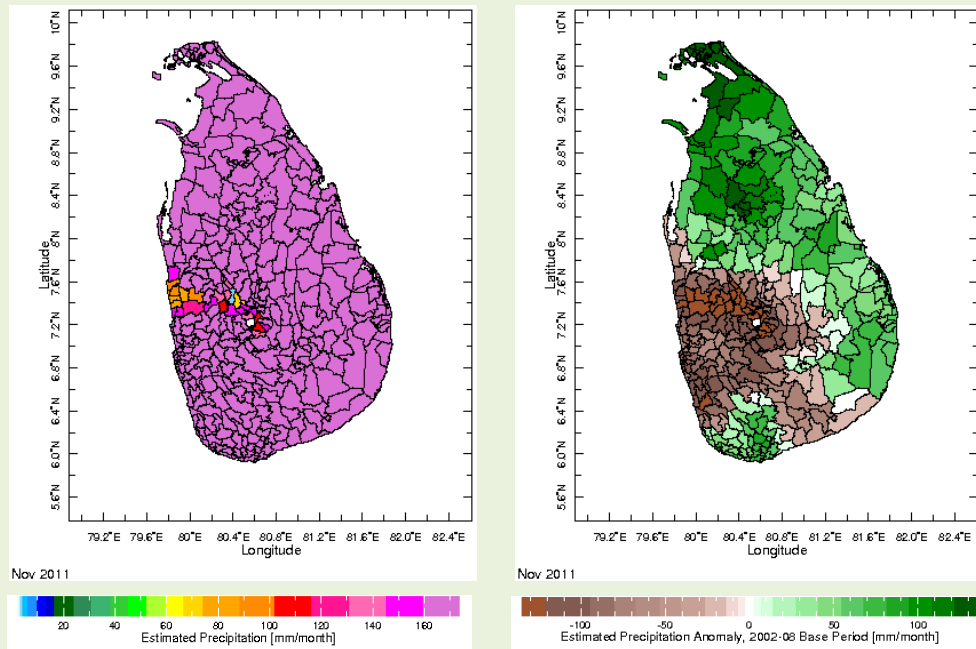
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

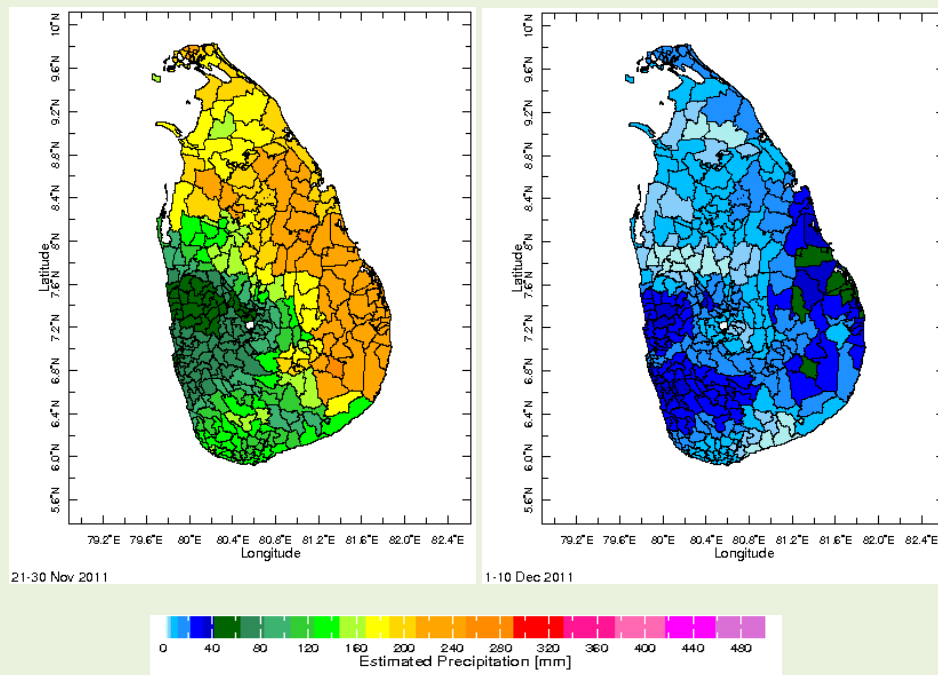
a) Daily Satellite Derived Rainfall Estimate Maps: 06th December – 13th December, 2011 (Left-Right, Top-Bottom)



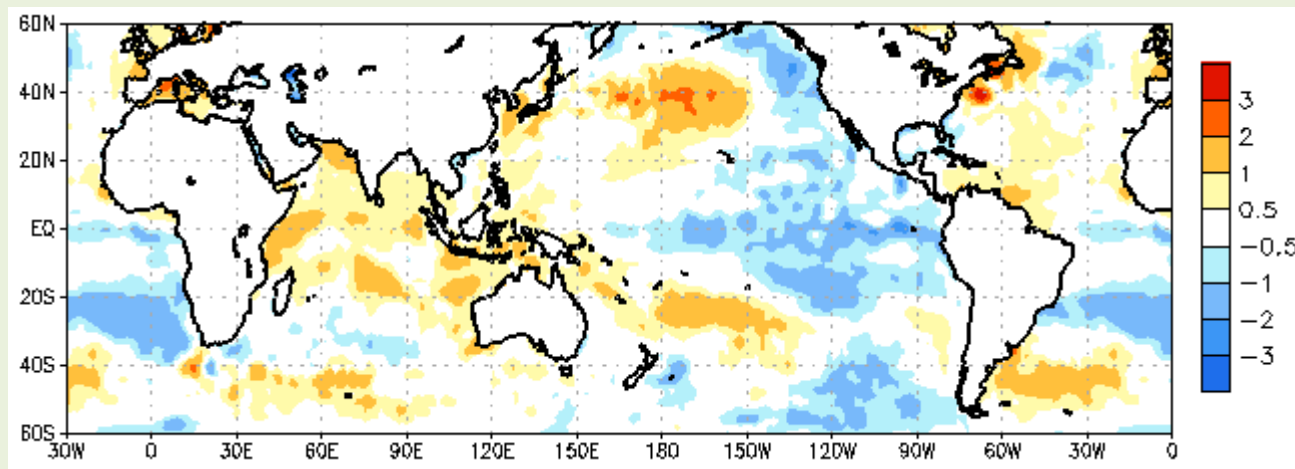
b) Monthly Satellite Derived Rain fall Estimates for November 2011 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-30 November and 01-10 December, 2011)



d) Weekly Average SST Anomalies

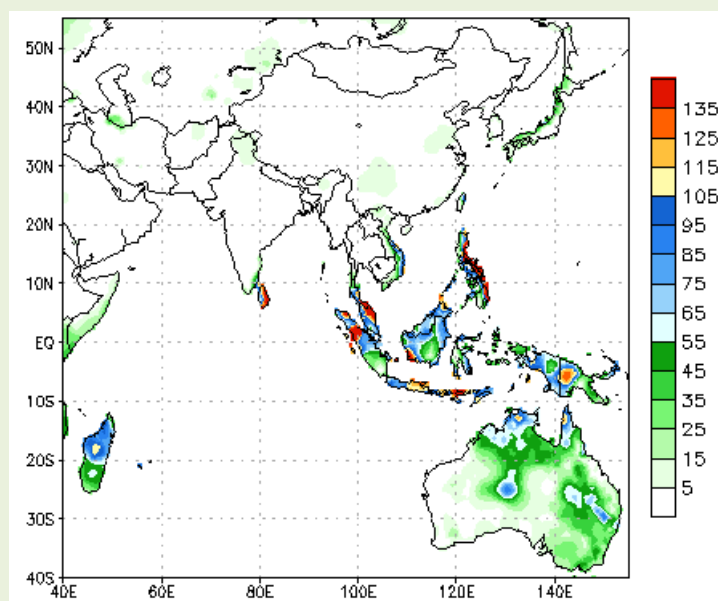


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 07th December, 2011

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.



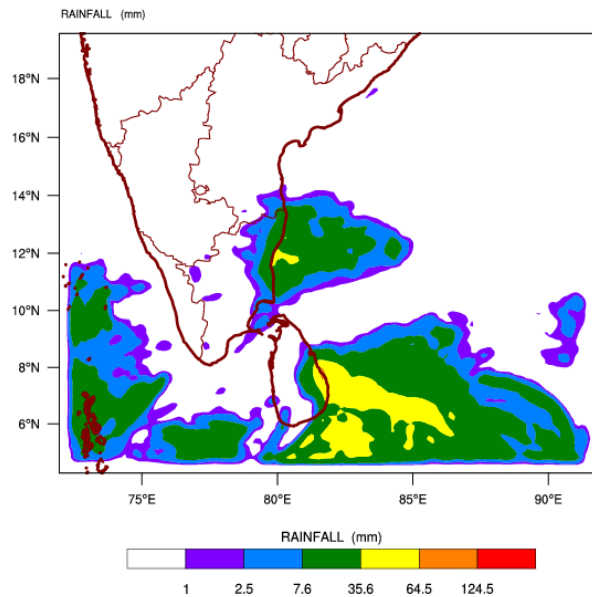
During next week, an accumulated rainfall of more than 135 mm is predicted for the eastern half of the Island.

Source – NOAA Climate Prediction Center

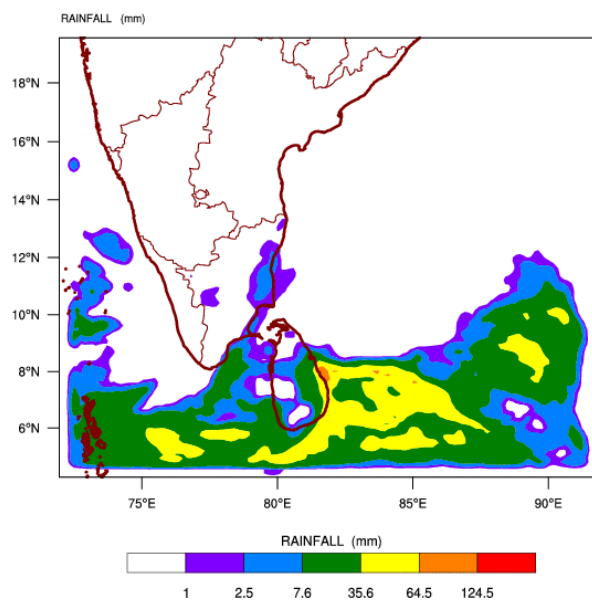
Map: Predicted accumulation of rainfall. (14th December – 20th December, 2011 week)

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

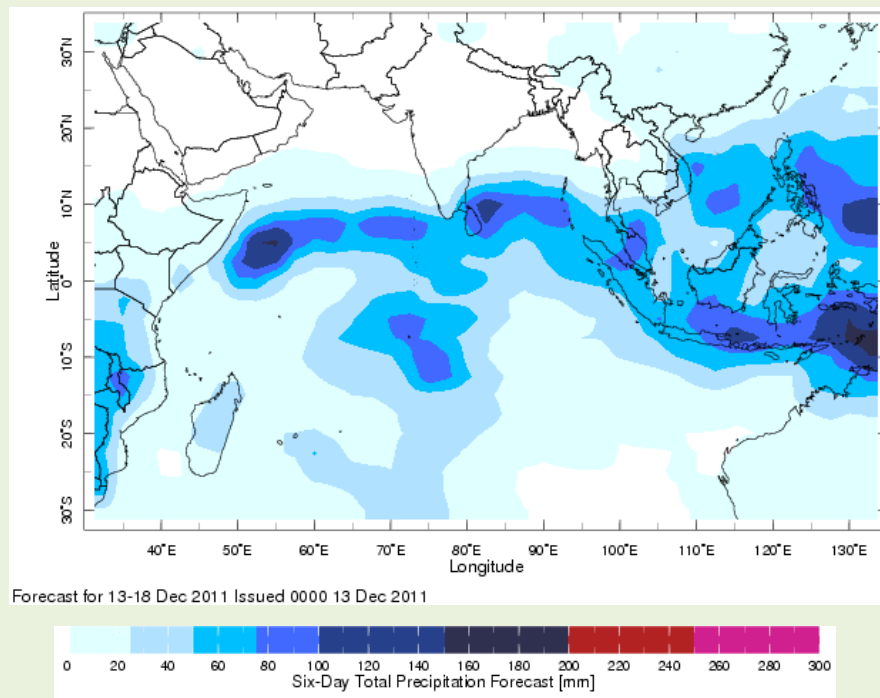
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 14-12-2011 valid for 03 UTC of 16-12-2011



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 14-12-2011 valid for 03 UTC of 17-12-2011



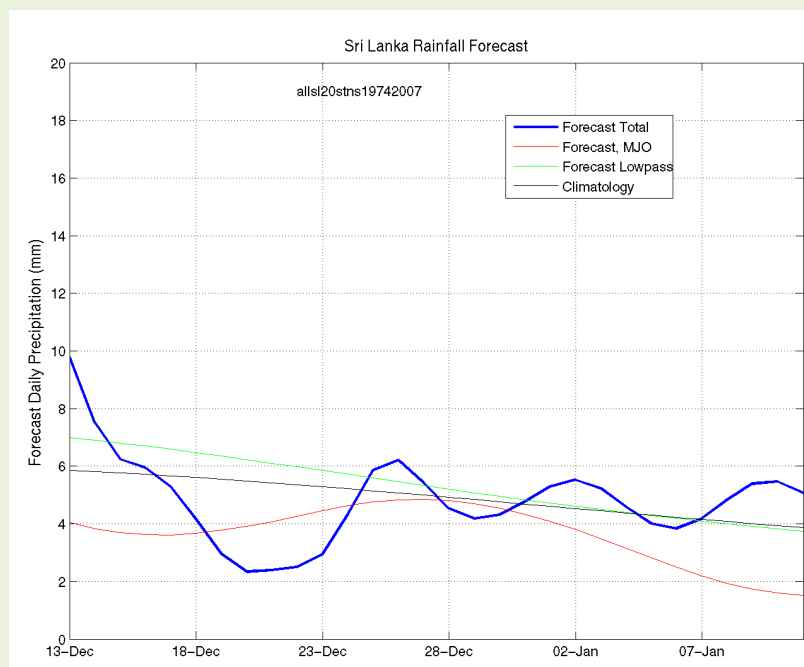
c) Weekly Precipitation Forecast for 13-18 Dec, 2011. (Precipitation Forecast in Context Map Tool, IRI)



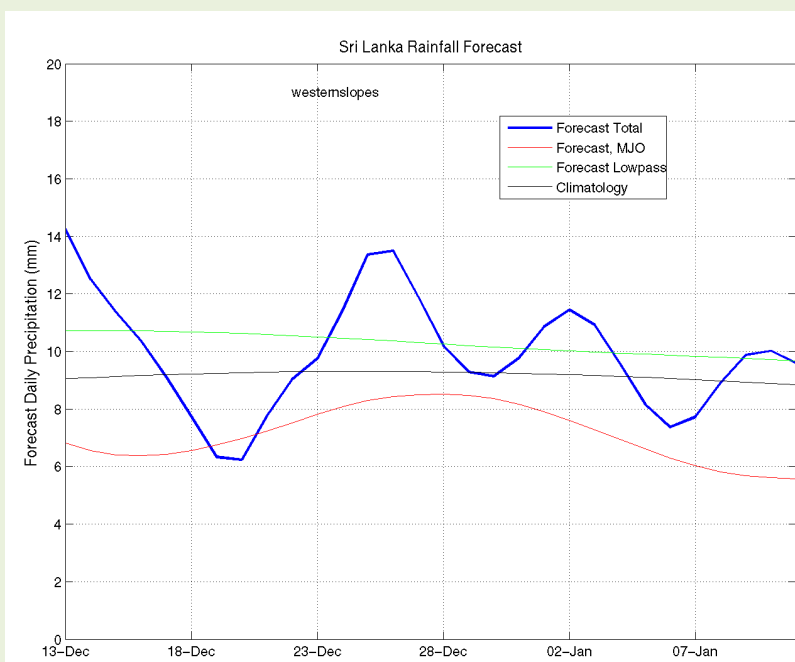
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 14th December, 2011

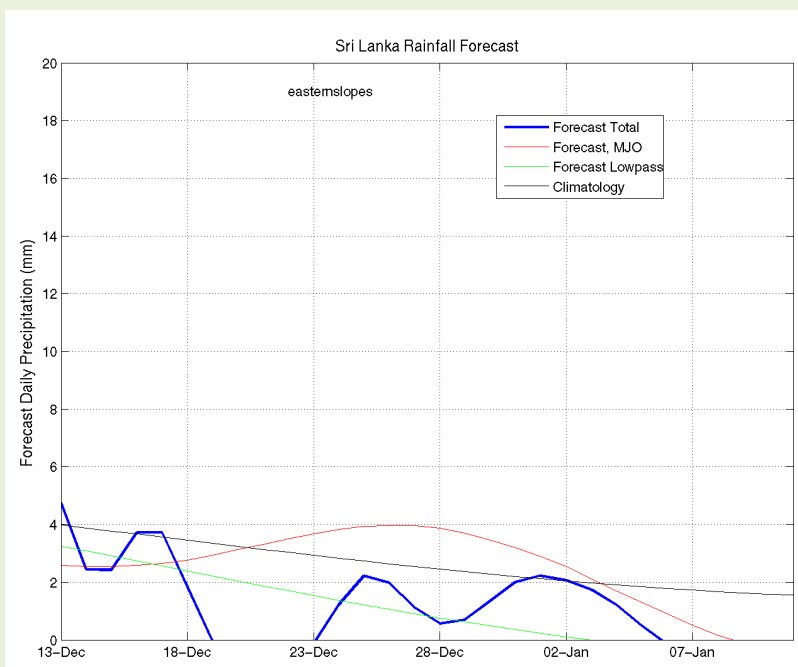
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



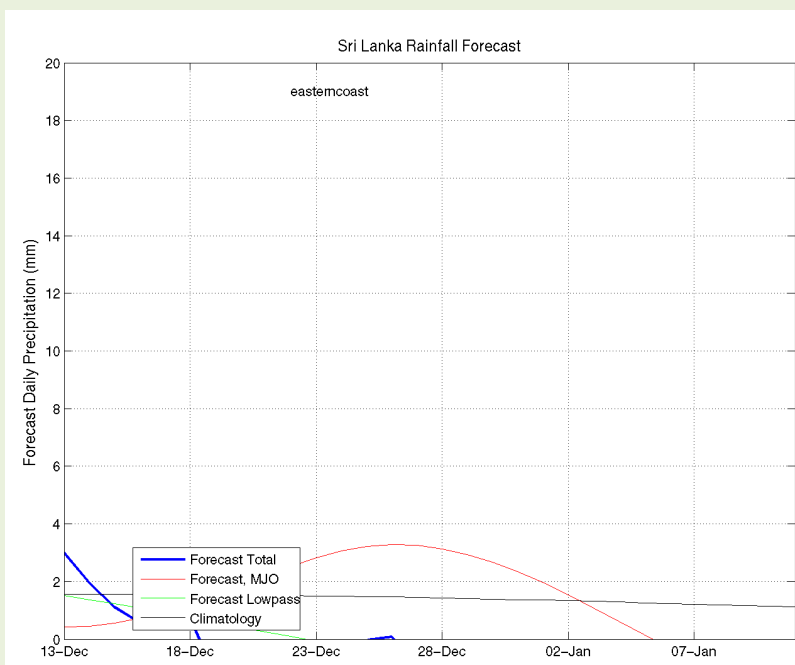
Western Slopes (Rainfall Scale from 0-20 mm/day)



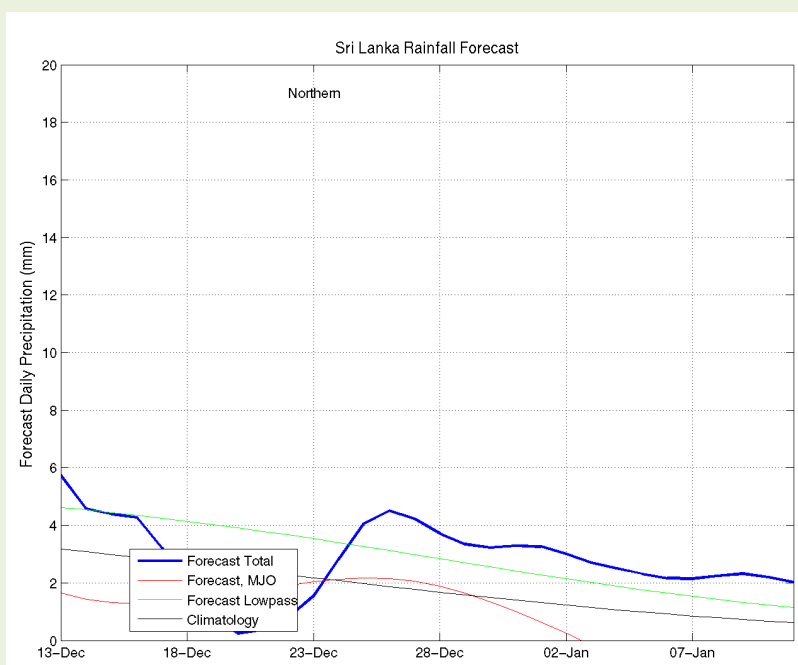
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



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



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



e) Seasonal Rainfall and Temperature Predictions from IRI

