

Experimental Climate Monitoring and Prediction

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

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FECT BLOG

Past reports available at

<http://fectsl.blogspot.com/>

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ENSO Update

19 July 2012

Slightly more than 70% of the ENSO prediction models predict El Nino conditions developing around the August- October season, continuing through the rest of 2012. However, nearly 30% of the models still indicate persistence of ENSO- neutral conditions. No models indicate a re-emergence of La Nina conditions (IRI)

Summary² Monitoring

Weekly Monitoring: During the last week (24th-31st July) there was no significant rainfall experienced and dry conditions prevailed throughout the country.

Monthly Monitoring: During July, southern half of the island experienced a below average rainfall with an increased below average particularly in the Western and South Western regions. It clearly reflects the deficit of the South West Monsoon rainfall up to now. The rest of the island experienced an above average rainfall with a higher intensity in the Trincomalee district while some parts of the Moneragala district also experienced an above average rainfall.

Predictions

7 Day Prediction: For the coming week an accumulated rainfall of 5 mm - 15 mm is predicted particularly in some parts of the South Western region, Western region.

IMD WRF Model Forecast & IRI forecast: 1mm- 8mm rainfall is predicted for some parts of Puttalam district, Colombo, Gampaha, Kalutara and Galle districts on the 3rd of August. Rainfall is predicted for the same districts with an increased rainfall of about 36mm particularly for Colombo, Gampaha and Kalutara districts on the 4th August. No rainfall is predicted for the rest of the country. NOAA models forecast up to 20 mm of rainfall till the 5th of August for the entire island.

1 Month Prediction: Overall a continuation of the existing conditions shall be expected. A low rainfall with fluctuations shall be expected. The maximum rainfall shall not exceed 6mm. *Western slopes-* Rainfall fluctuations shall be expected. Wet conditions shall not be expected and the maximum rainfall shall not exceed 7mm. Rainfall is not predicted after the 24th of August. *Eastern slopes-* The Rainfall shall increase rapidly till the 8th of August followed by a decreasing trend with minor fluctuations till the 27th of August. The maximum rainfall shall not exceed 7mm. *Northern region-* A rapid increase of rainfall shall be observed till the 6th of August followed by a decreasing trend with some fluctuations. The maximum rainfall shall not exceed 6mm.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for August 2012 to October 2012, issued in July 2012, there is a 60%-70% probability for temperature to be above normal in the country. There is 40% probability for rainfall 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, 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

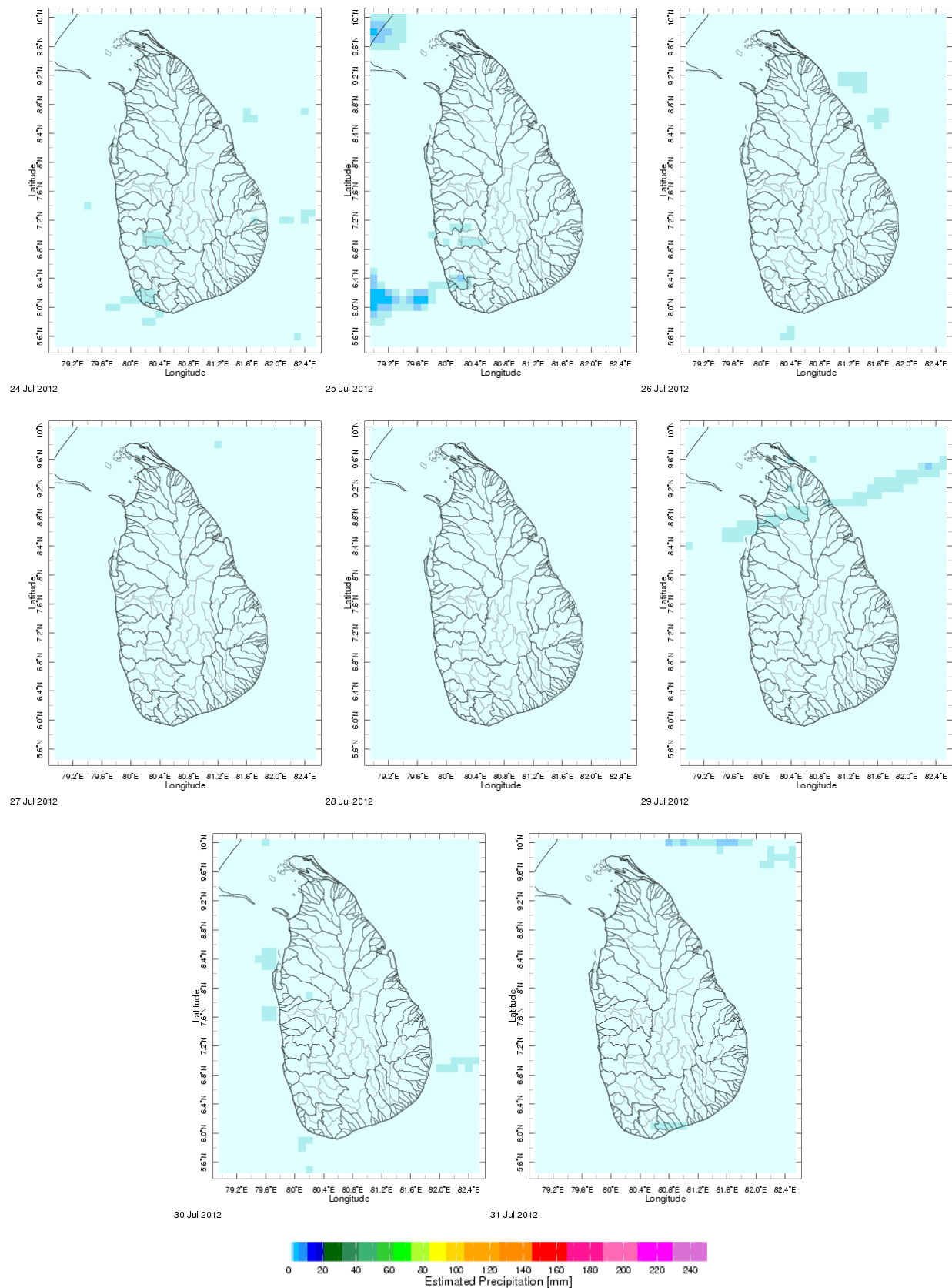
International Research Institute for Climate and Society.

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

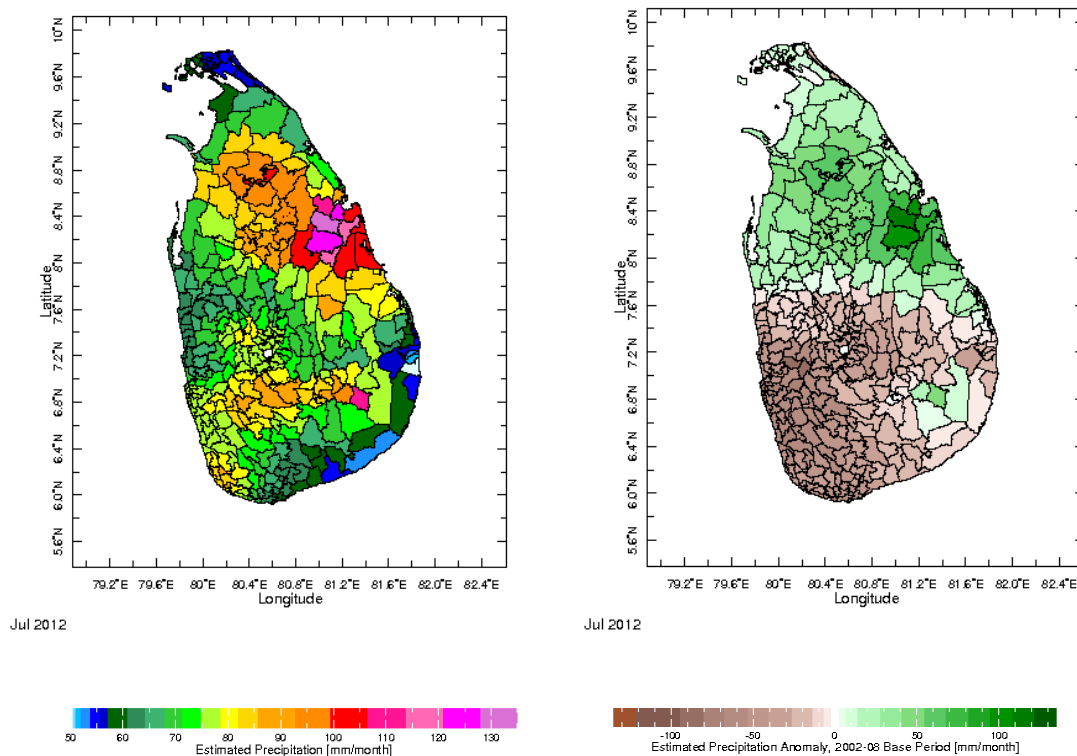
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

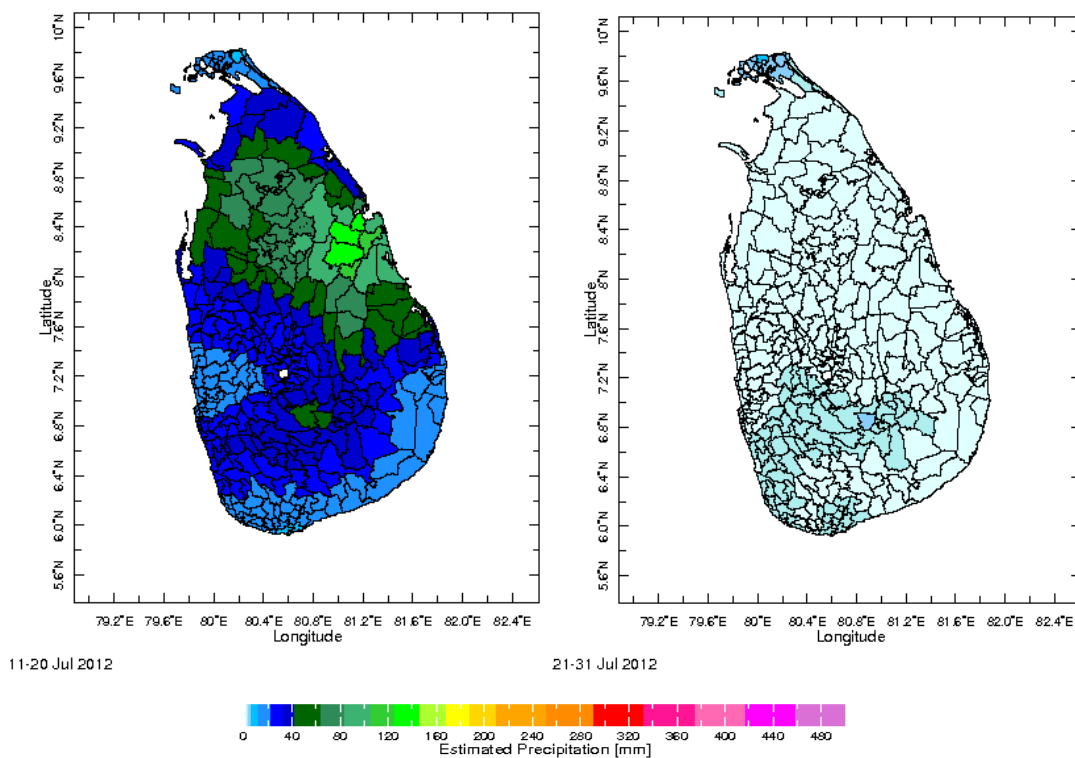
a) Daily Satellite Derived Rainfall Estimate Maps: 24th July – 31st July, 2012 (Left-Right, Top-Bottom)



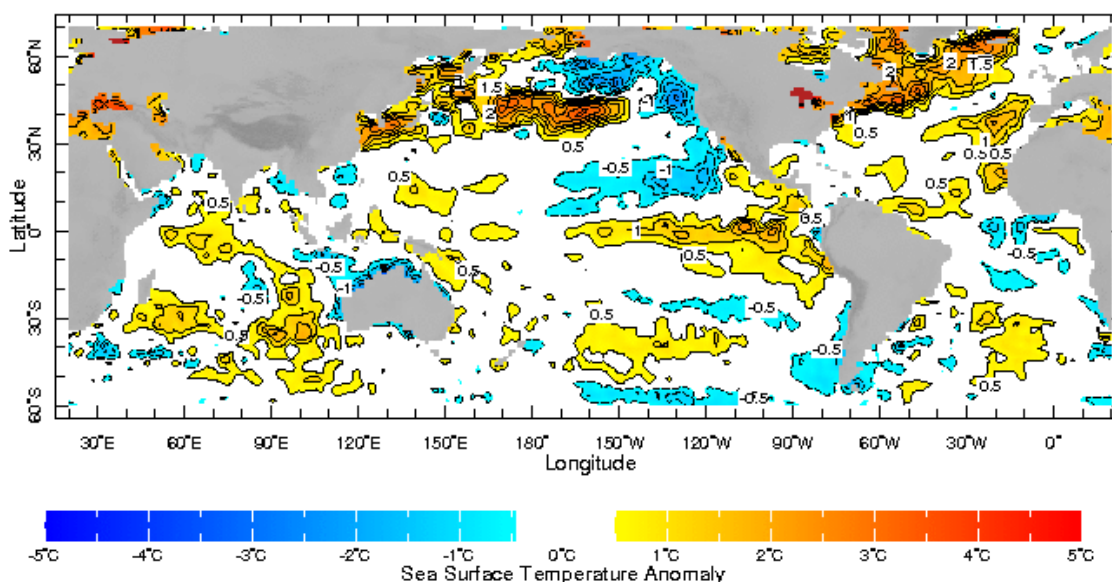
b) Monthly Satellite Derived Rain fall Estimates for July 2012 (Total – Left and Anomaly -Right)



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



d) Weekly Average SST Anomalies

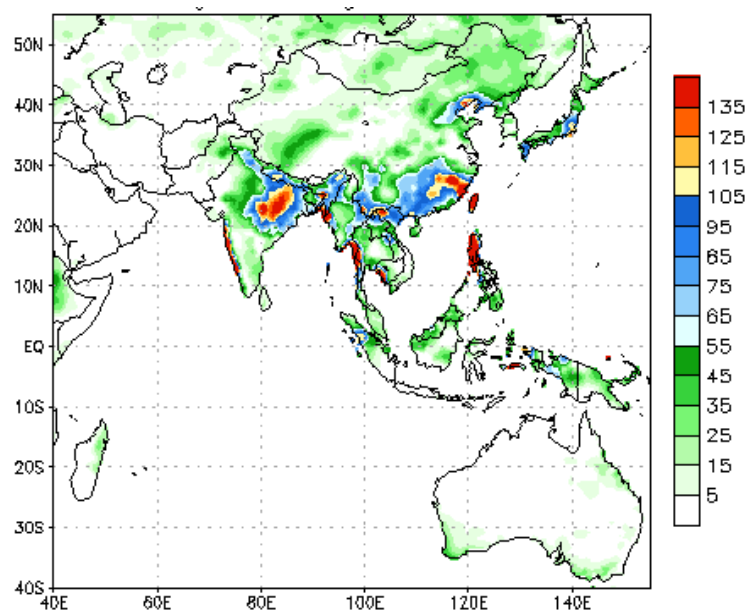


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 22-28 July, 2012

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

2. Predictions

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



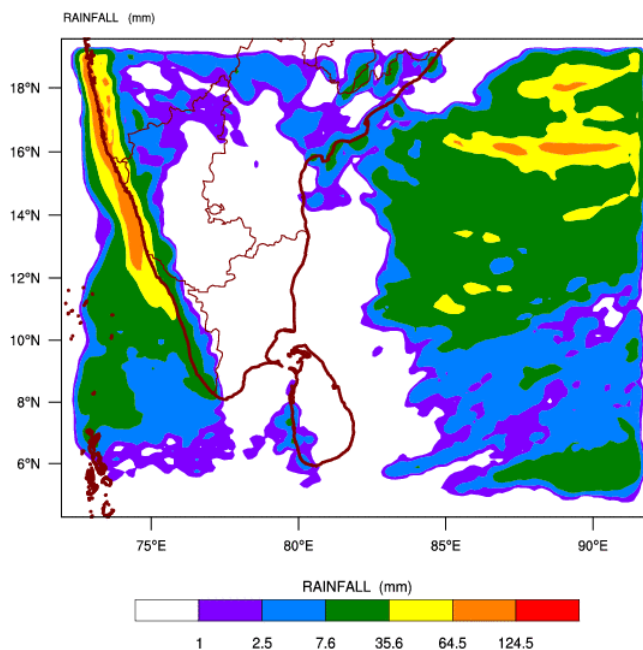
During next week, an accumulated rainfall of 5mm-15 mm is predicted particularly in the South Western and Western regions.

Source – NOAA Climate Prediction Center

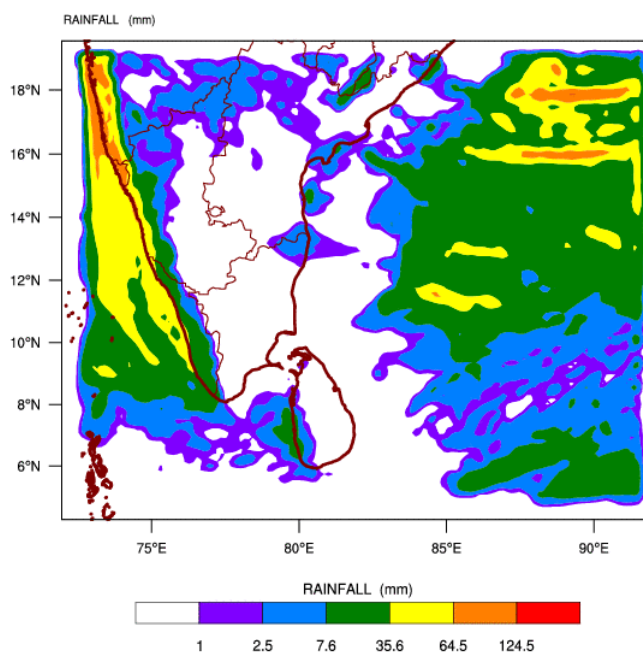
Map: Predicted accumulation of rainfall. (01– 07 Aug, 2012 week)

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

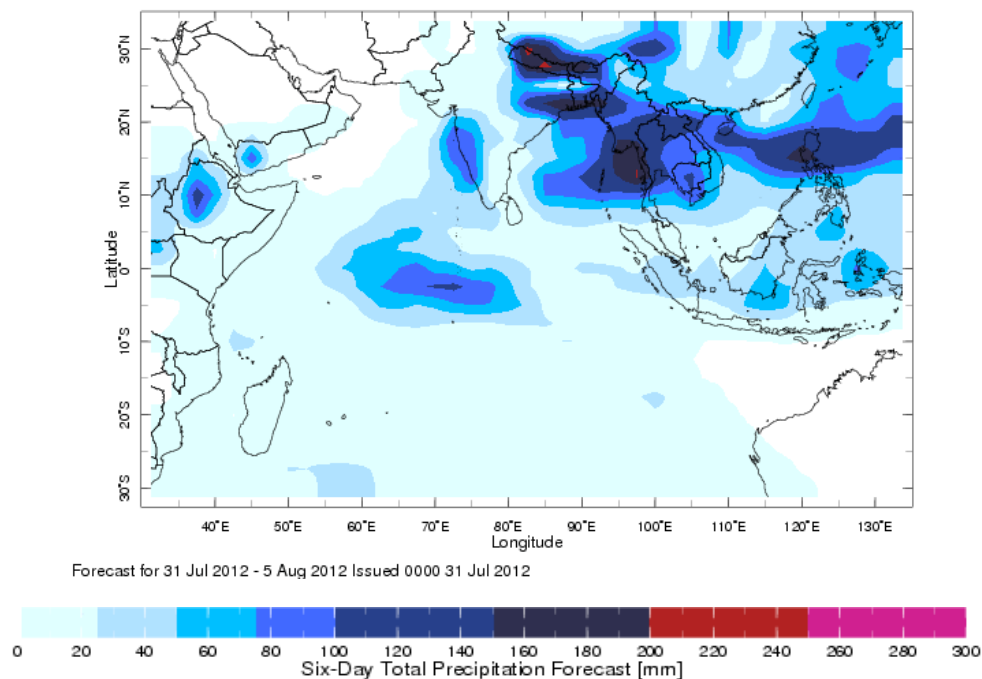
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 01-08-2012 valid for 03 UTC of 03-08-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 01-08-2012 valid for 03 UTC of 04-08-2012



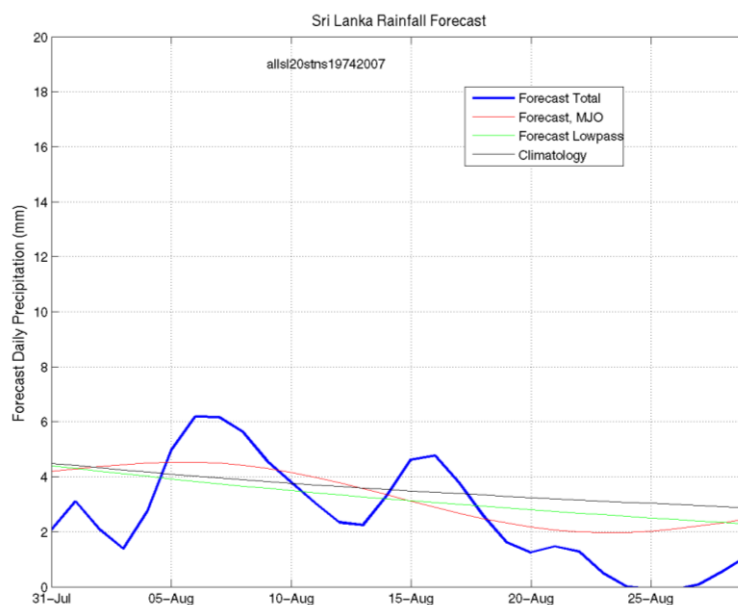
c) Weekly Precipitation Forecast for 31 Jul- 05 Aug 2012 (Precipitation Forecast in Context Map Tool, IRI)



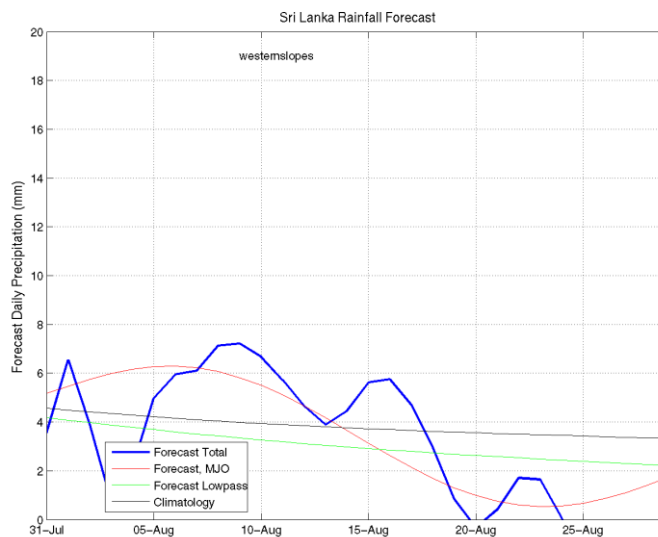
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 02nd Aug, 2012

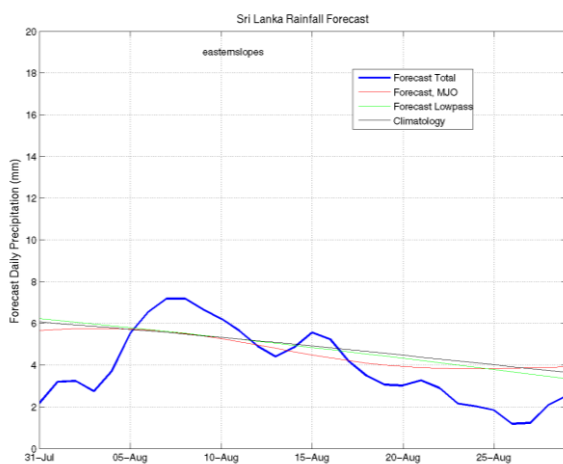
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



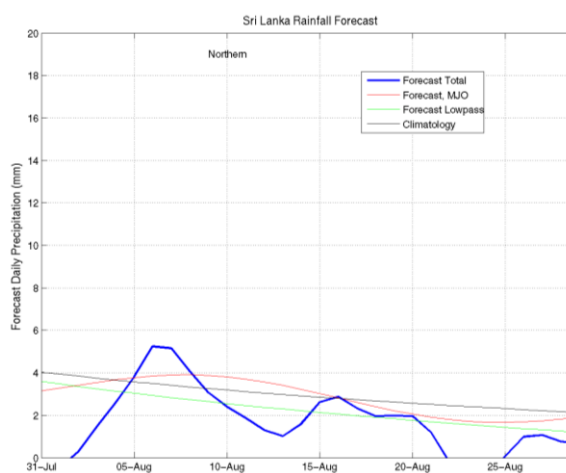
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

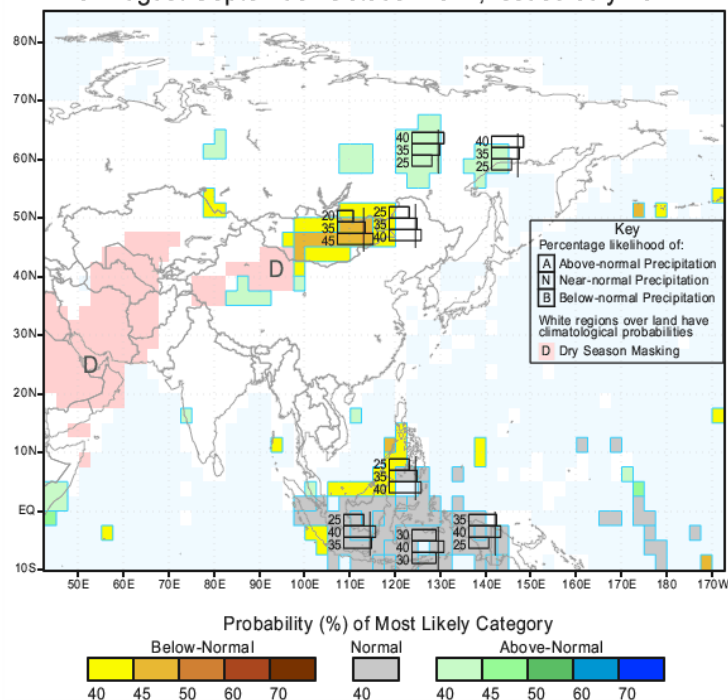


Northern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for August-September-October 2012, Issued July 2012



IRI Multi-Model Probability Forecast for Temperature
for August-September-October 2012, Issued July 2012

