

Experimental Climate Monitoring and Prediction

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

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(FECT and IRI)

5 March 2013

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 (28th-30th December) rainfall ranging between 5mm-30 mm was experienced particularly in the Northern, North Central regions, lower half of the Mahaweli basin, Trincomalee and Ampara districts, while the latter half was almost dry.

Monthly Monitoring: During December above average rainfall was experienced particularly in the districts of Ampara, Batticaloa, Trincomalee, Polonnaruwa, eastern part of Anuradapura district and Jaffna Peninsula. Most of this rain fell on the 1st and 2nd dekads of the month. The rainfall was below average in the rest of the country.

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts low amount of accumulated rainfall ranging between 5mm-45mm particularly for the eastern regions of the island.

IMD WRF Model Forecast & IRI forecast WRF model predicts rainfall conditions for most parts of the island during the coming two days. For the 06th of January it predicts maximum of about 65mm of rainfall particularly for the coastal side of the Batticaloa district and 1mm-36mm rainfall for the Eastern, South-Western, Western, North Eastern regions and some parts of the Kurunegala, Puttalam, Anuradhapura and Polonnaruwa districts. Nearly the same pattern is predicted for the 7th, but it shall further spread towards Mannar, Vaunya and Kilinochchi districts.

1 Month Prediction: Overall High rainfall shall not be expected for the coming month of period. Rainfall shall decrease dramatically till the 12th January. Again it shall dramatically increase till the 17th and continue till the 23rd. It shall again decrease dramatically with minor fluctuations till the end of January. *Western slopes* shall follow nearly the same pattern but shall show an increased rainfall pattern. Quite high rainfall shall be expected after the 20th till the 29th January. Considerable amount of rainfall is not predicted for the *Eastern slopes* for the coming month. Likewise there shall be no considerable rainfall for the *Northern region* for the same period.

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.

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
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

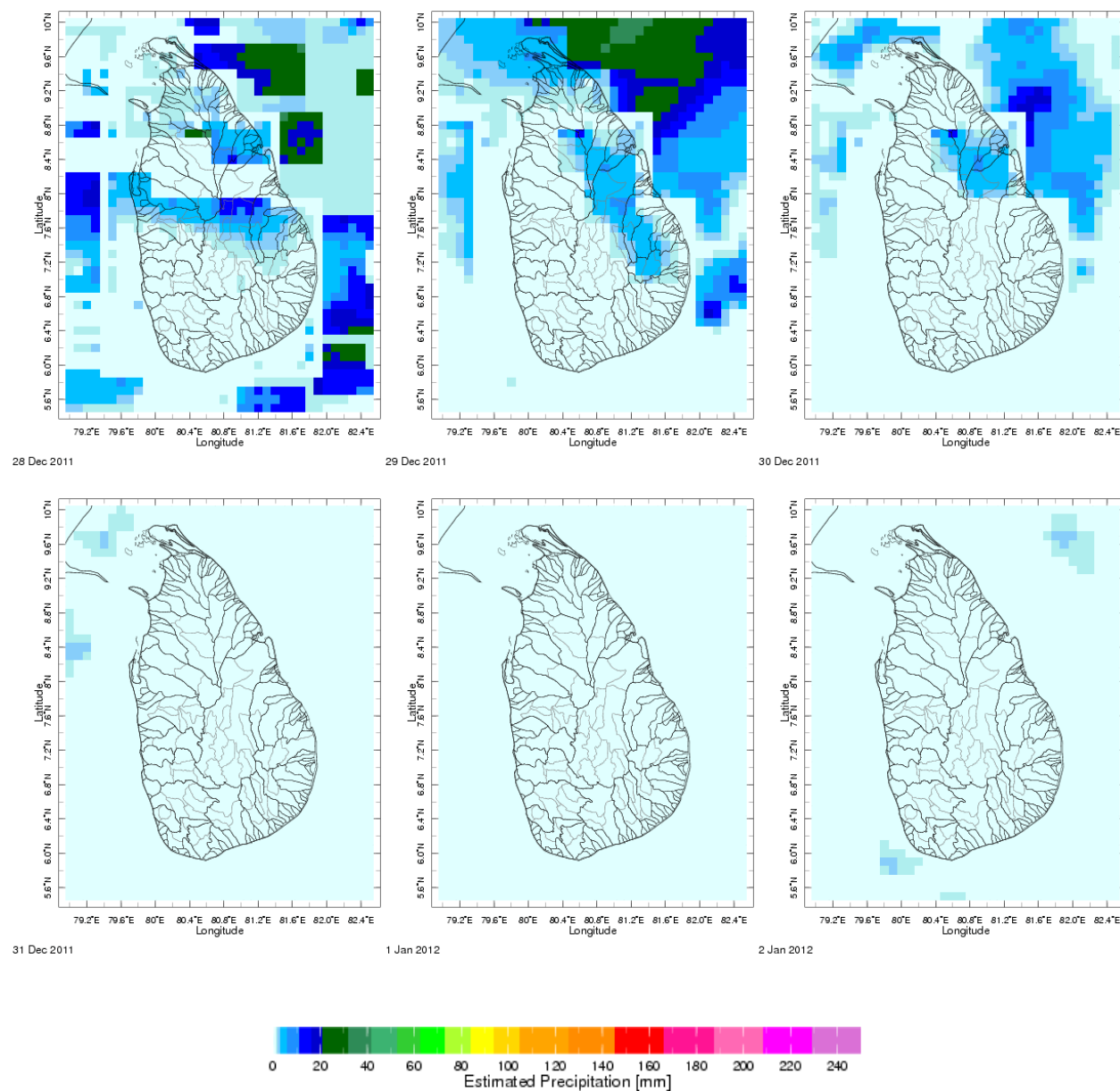
International Research Institute for Climate and Society.

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

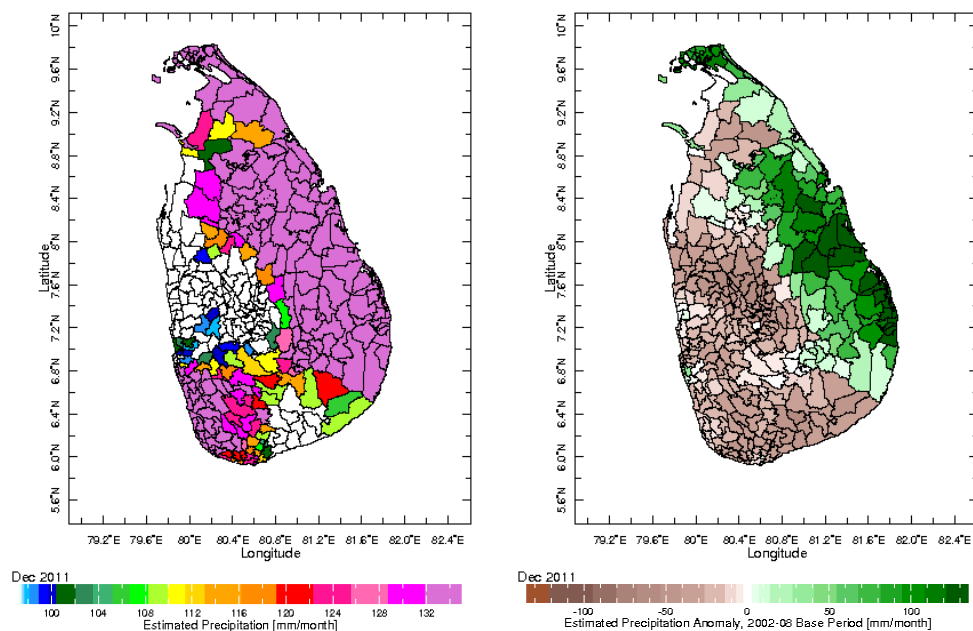
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

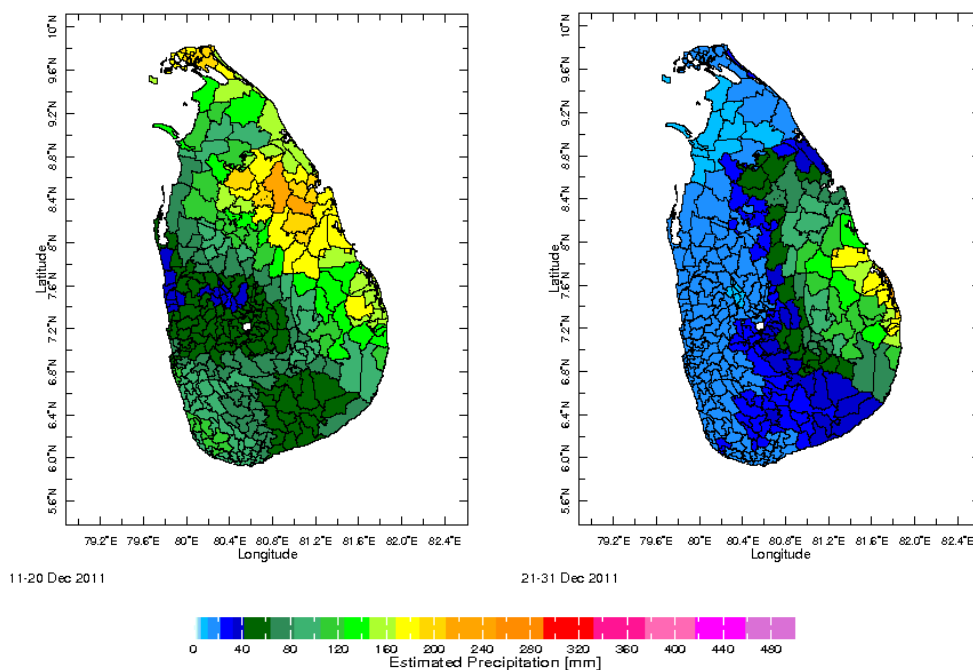
a) Daily Satellite Derived Rainfall Estimate Maps: 28th December – 02nd January, 2011 (Left-Right, Top-Bottom)



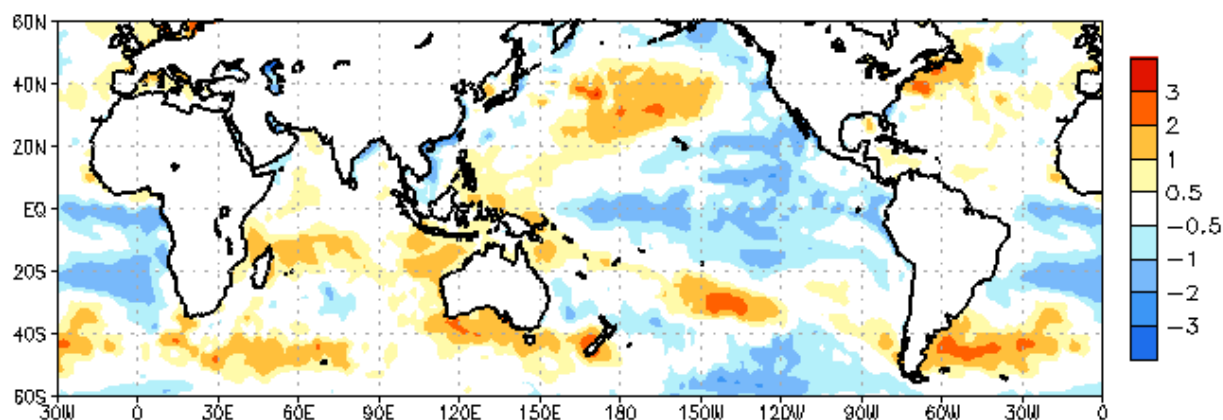
b) Monthly Satellite Derived Rain fall Estimates for December 2011 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 & 21-31 December, 2011)



d) Weekly Average SST Anomalies

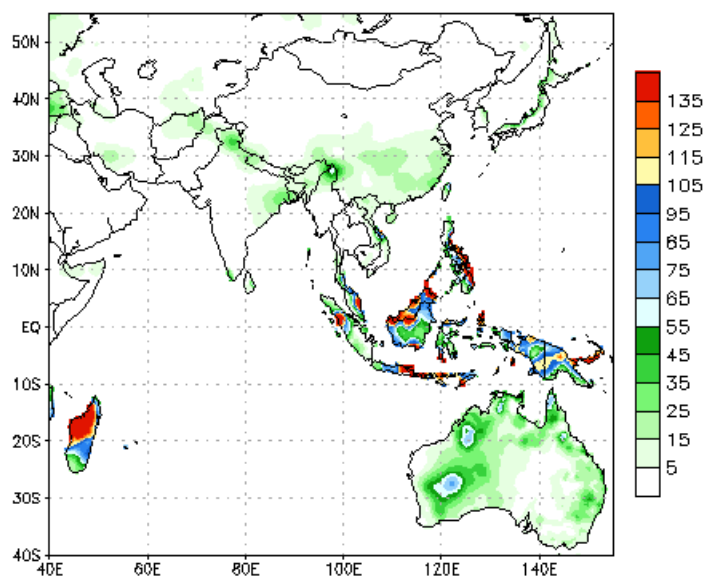


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 28th December, 2011

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.



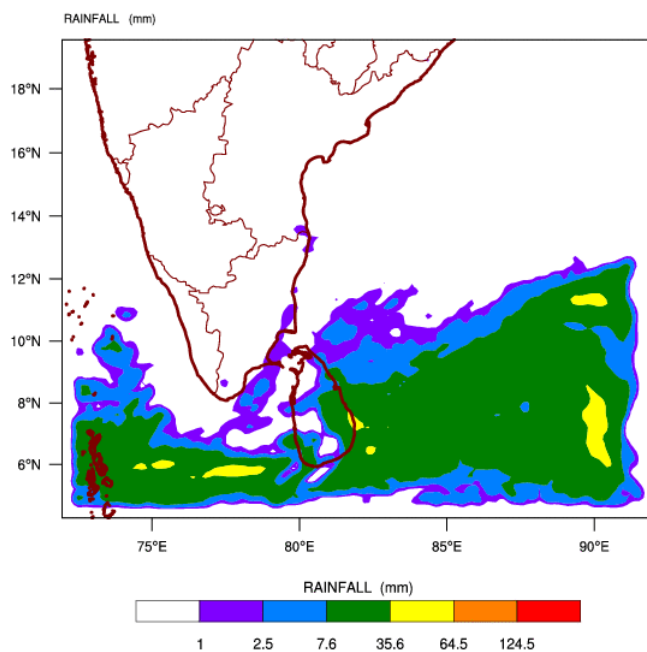
During next week, an accumulated rainfall of 5mm -45 mm is predicted particularly for the eastern Regions of the Island.

Source – NOAA Climate Prediction Center

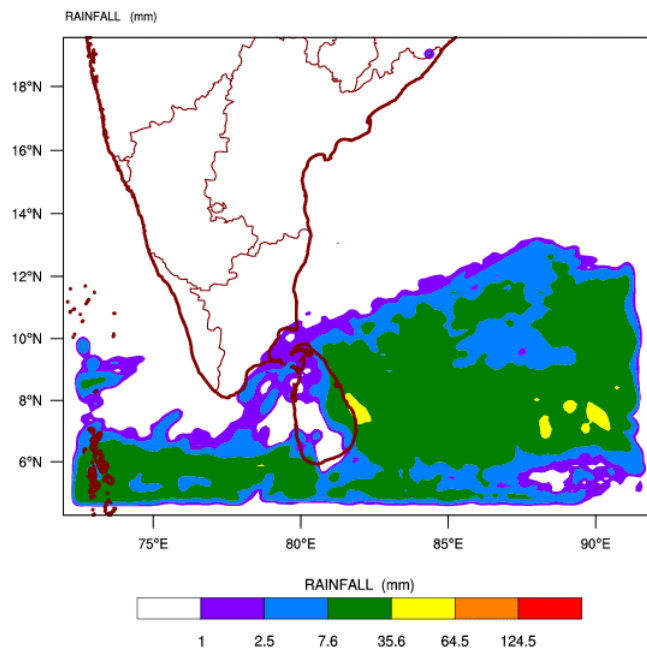
Map: Predicted accumulation of rainfall. (4th Jan 2012 – 10th Jan, 2012 week)

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

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 04-01-2012 valid for 03 UTC of 06-01-2012



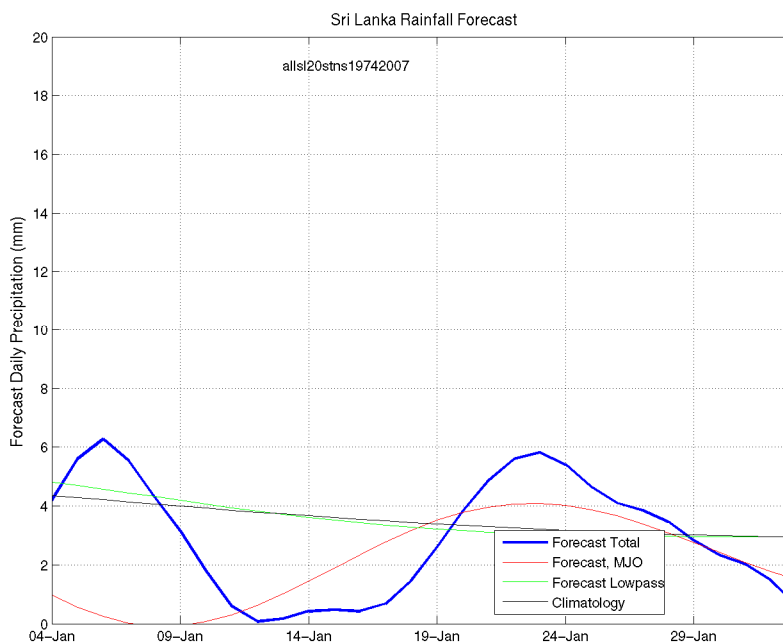
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 04-01-2012 valid for 03 UTC of 07-01-2012



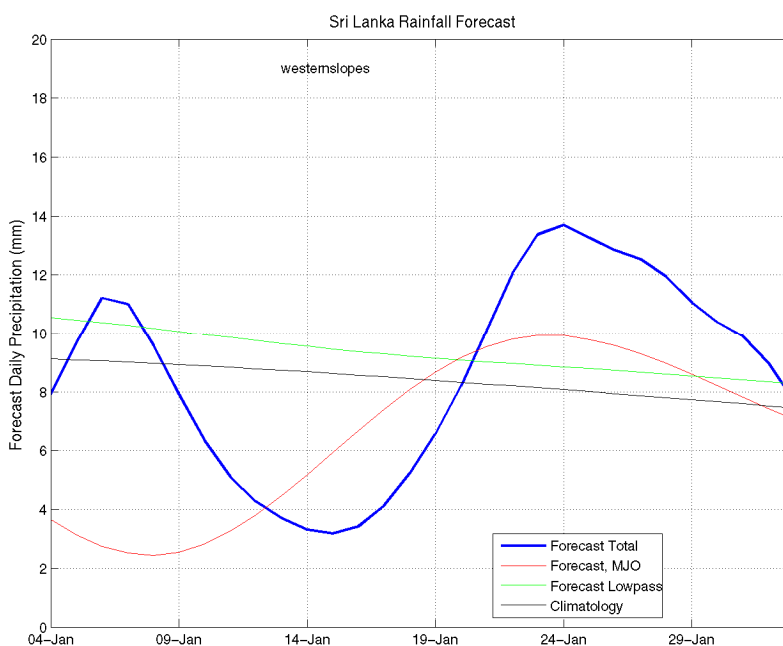
c) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 04th January, 2012

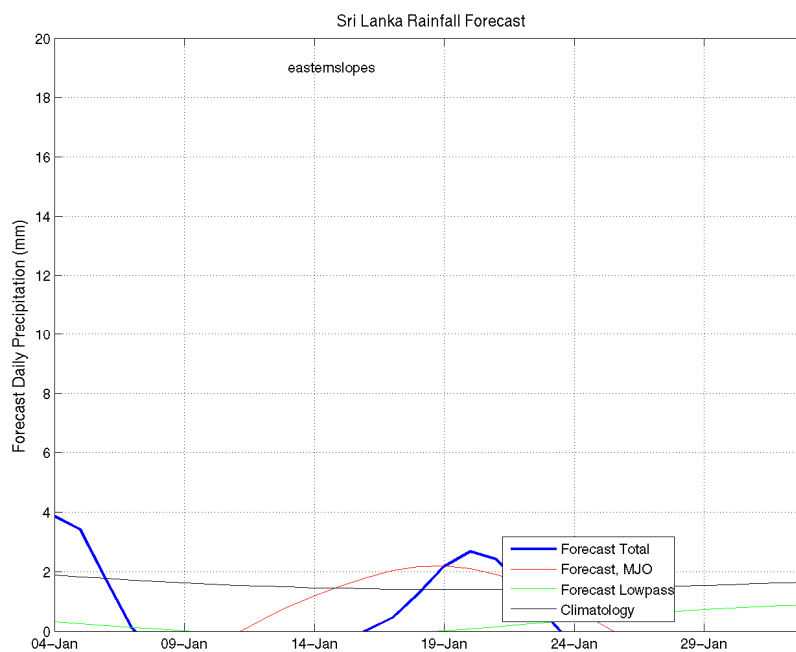
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



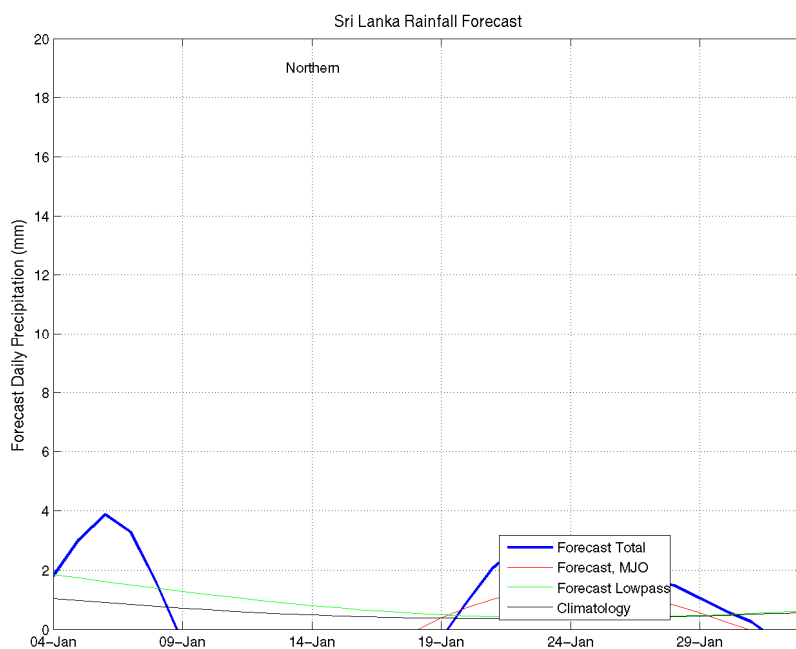
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

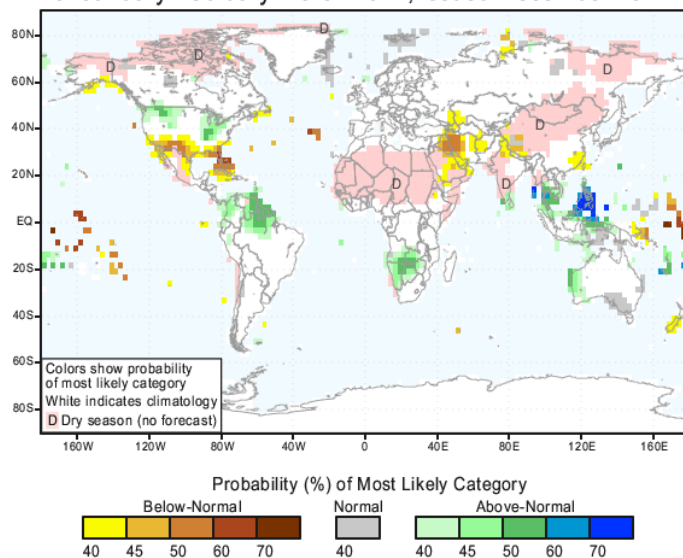


Northern Region (Rainfall Scale- from 0-20 mm/day)



d) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for January-February-March 2012, Issued December 2011



IRI Multi-Model Probability Forecast for Precipitation
for January-February-March 2012, Issued December 2011

