

Experimental Climate Monitoring and Prediction

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

by: Madhura Weerasekera, Sewwandhi Chandrasekara, Sanjaya Ratnayake, Zeenas Yahiya, Lareef Zubair and Michael Bell
(FECT and IRI¹)

3 May 2012

FECT BLOG

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

and

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

FECT WEBSITE

<http://www.climate.lk>

and

<http://www.tropicalclimate.org/>

ENSO Update

19 April 2012

Many of the ENSO prediction models predict neutral ENSO conditions from the April-June period through the remainder of 2012, implying an end to the 2011-12 La Nina. However, approximately 40% of models predict El Nino conditions developing by the July-September season and continuing through 2012.

(IRI)

Summary² Monitoring

Weekly Monitoring: During the week 24th April-01st May rainfall ranged between 0-190 mm. Most Parts of the country received rainfall throughout the week. The maximum rainfall of 190 mm was observed in Mulativ district on the 24th April. Compared to rest of the days in the week, 27th April and 1st of May received lesser rainfall of 5-10 mm in few isolated places in the country.

Monthly Monitoring: During April, the entire island has shown an above average rainfall.

Predictions

7 Day Prediction: In the coming week, an accumulated rainfall of 5 mm-85 mm is predicted for the Southwestern regions of the island, and 5 mm-55 mm is predicted for the rest of the island except for the Northern and North central regions.

IMD WRF Model Forecast & IRI forecast: WRF Model Predicts less than 1 mm rainfall for the entire country on both 4th and 05th May, 2012. NOAA NCEP CFS model (delivered via IRI map tool) predicts a total of 25mm rainfall between 1st May - 06th May 2012.

1 Month Prediction: Overall, a rapid increase of rainfall shall be expected during 2nd-6th May 2012 and shall decrease gradually till the 13th of May. Thereafter it shall increase gradually with a minor fluctuation during 13th-21st May. *Western Slopes-* Rainfall shall increase drastically during 2nd-6th May. Between 6th-19th May rainfall shall decrease gradually with minor fluctuations. Thereon rainfall shall increase gradually. However for the one month period the amount of rainfall that shall be expected in the western slopes will be high compared to the other regions mentioned. *Eastern Slopes-* Rainfall shall increase during 2nd-6th May. During 6th-18th May rainfall shall decrease gradually and shall reach minimum of 2 mm daily precipitation on 18th May. There onwards rainfall shall increase drastically. *Northern Region-* Rainfall shall increase during 2nd-6th May as shown in other regions and shall decrease till 11th May. Thereafter rainfall shall increase gradually till end of the May 2012.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for May 2012 to July 2012, issued in April 2012, there is a 40%-45% probability for temperature to be below normal particularly in the northern half of the country while 40% probability for it is to be normal in the southern half. 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

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

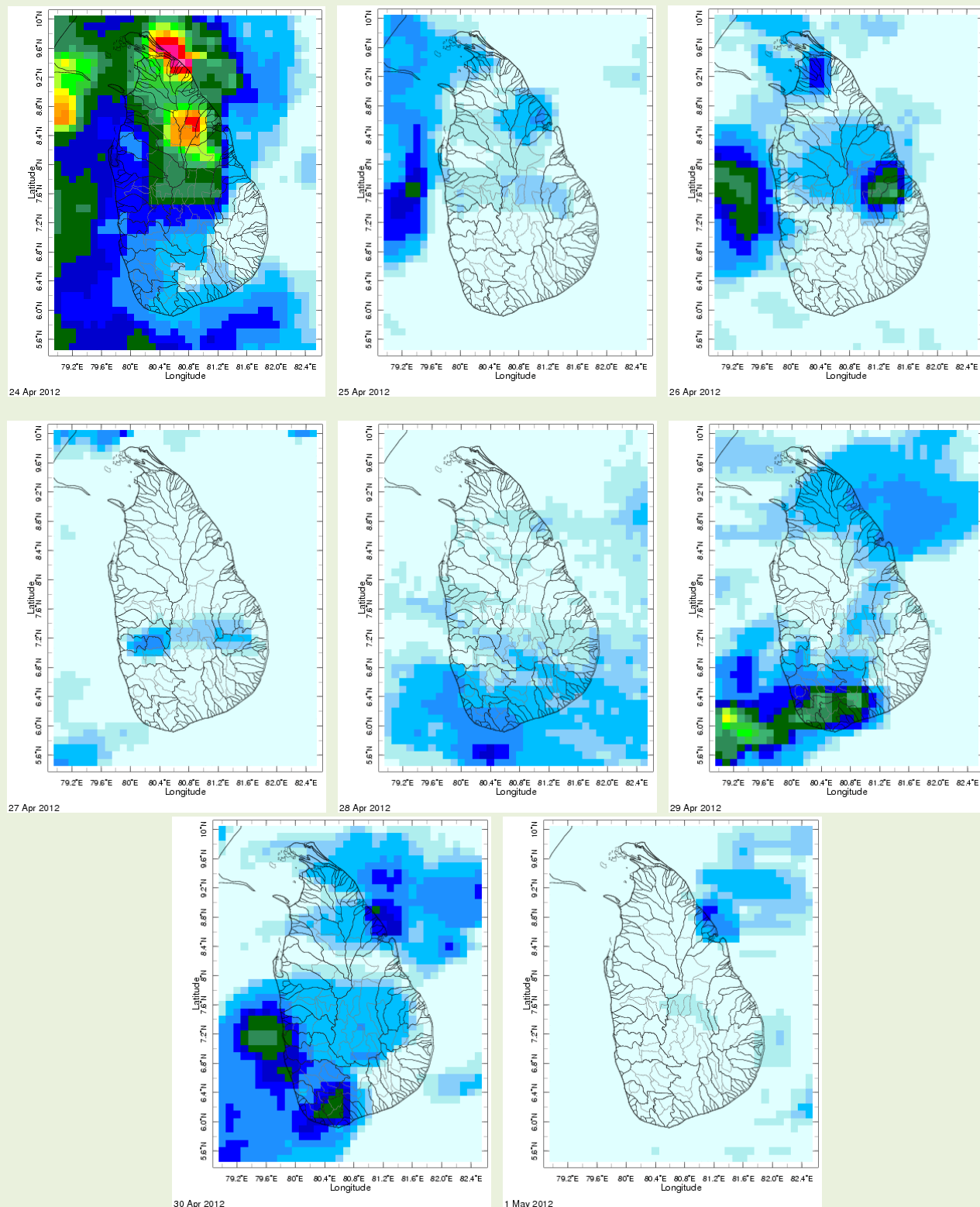
International Research Institute for Climate and Society.

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

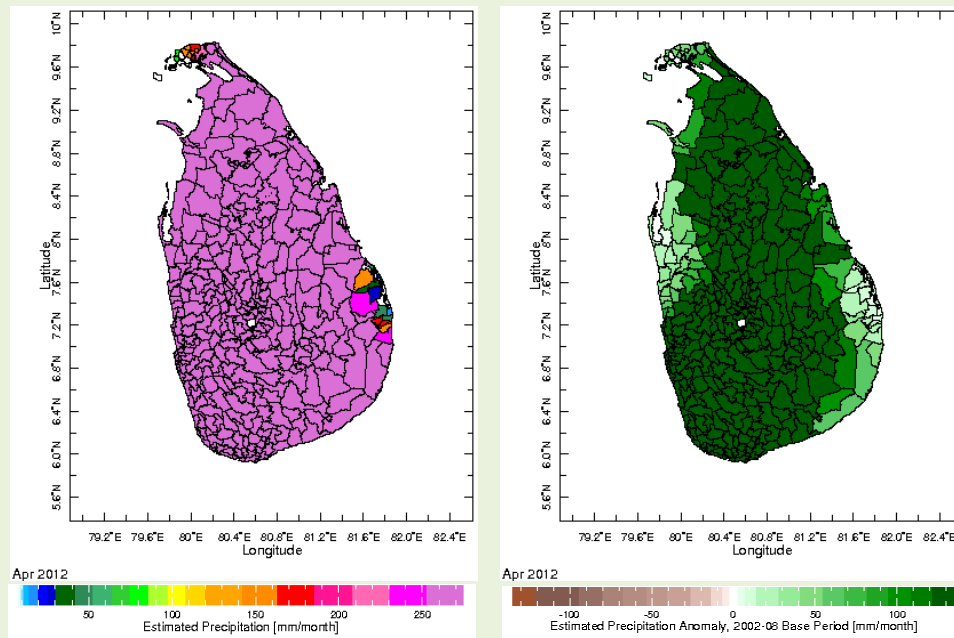
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

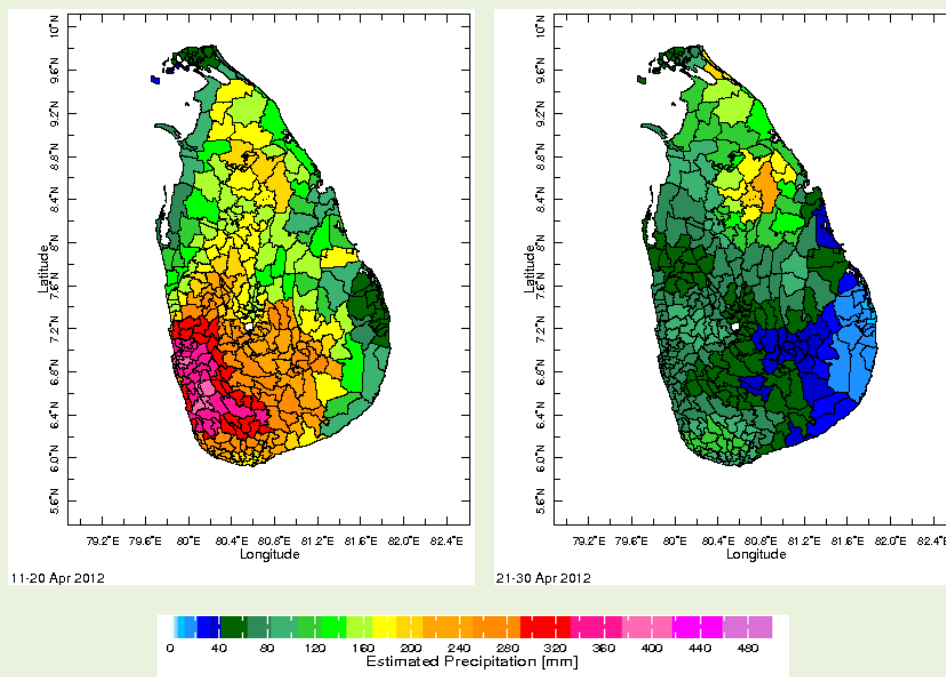
a) Daily Satellite Derived Rainfall Estimate Maps: 24th April – 1st May, 2012 (Left-Right, Top-Bottom)



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

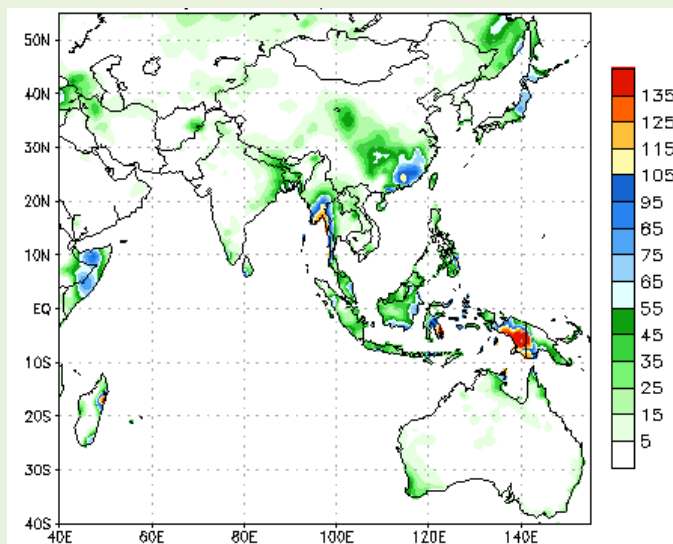


c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 April & 21-30 April 2012)



2. Predictions

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



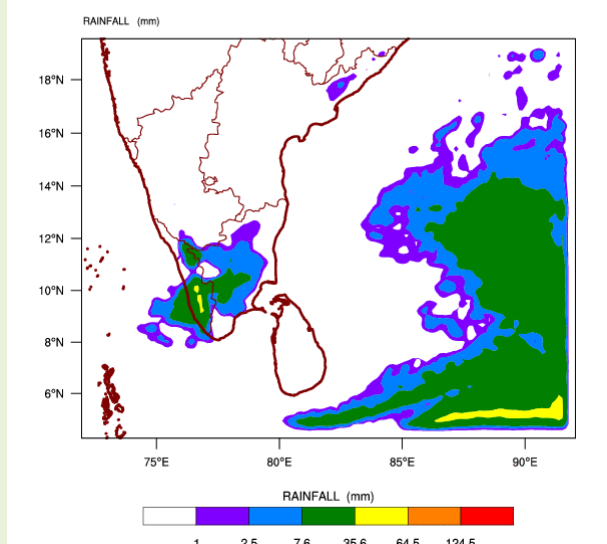
During next week, an accumulated rainfall of 5mm–85 mm is predicted for the Southwestern regions of the island and 5mm–55mm is predicted for the rest of the island except for the Northern and North central regions of the island.

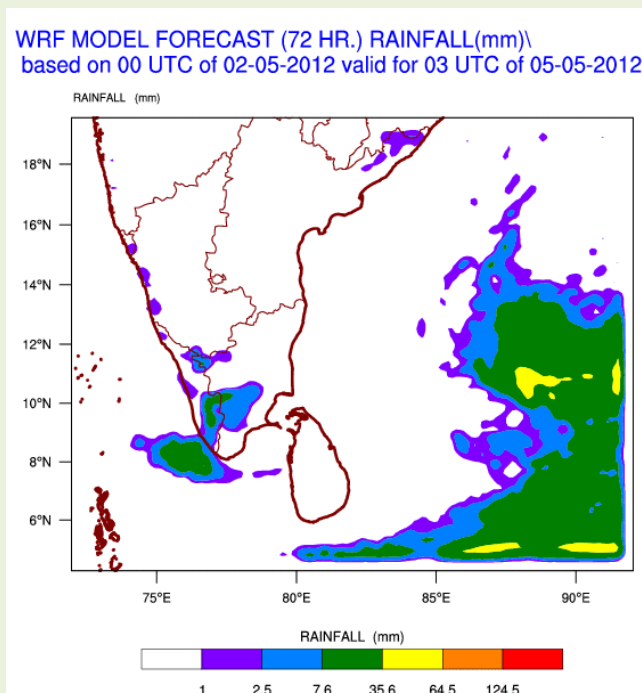
Source – NOAA Climate Prediction Center

Map: Predicted accumulation of rainfall. (02nd May– 08th May, 2012 week)

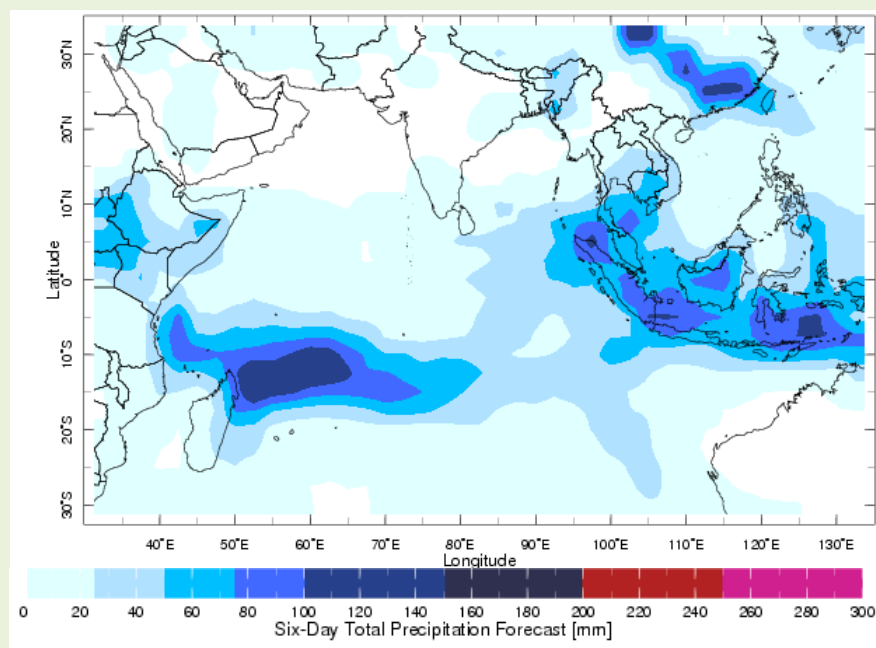
b) WRF Model Forecast (Regional Meteorological Center, Chennai, Indian Meteorological Department)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 02-05-2012 valid for 03 UTC of 04-05-2012





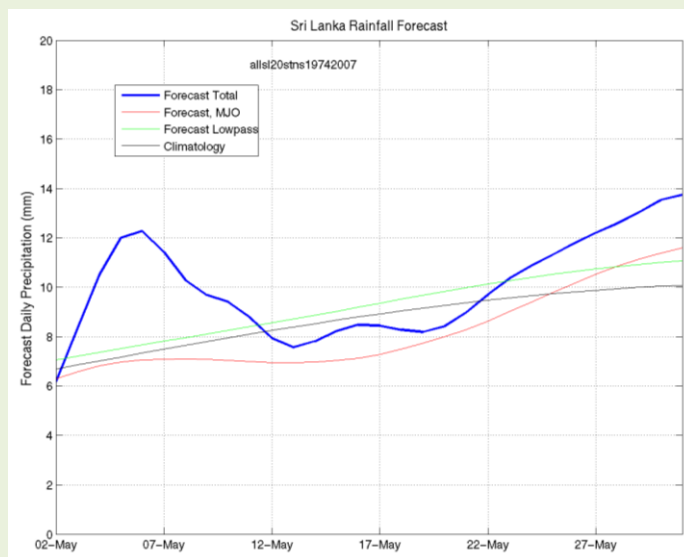
c) Weekly Precipitation Forecast for 01 May - 06 May 2012 (Precipitation Forecast in Context Map Tool, IRI)



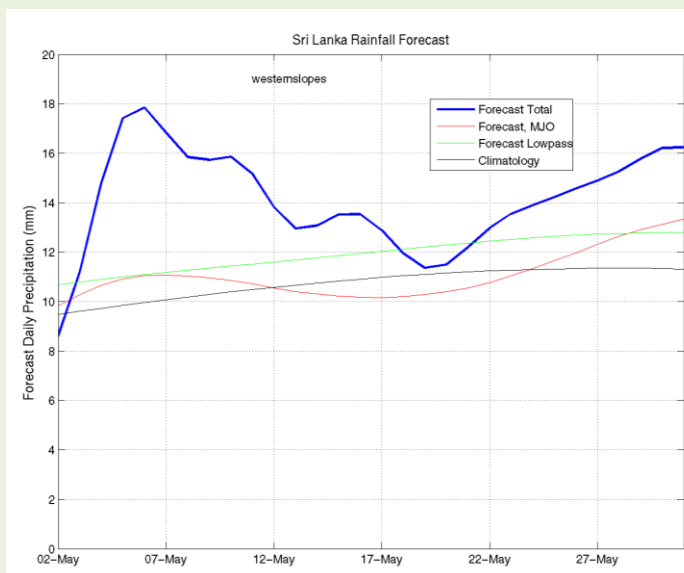
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 03rd May, 2012

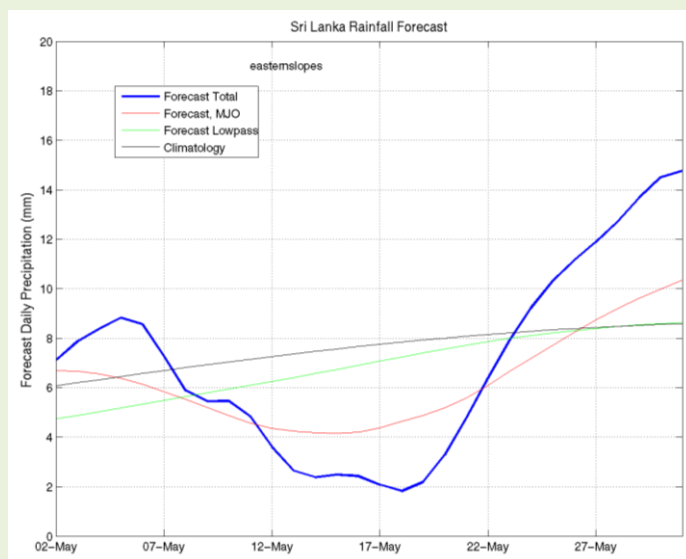
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



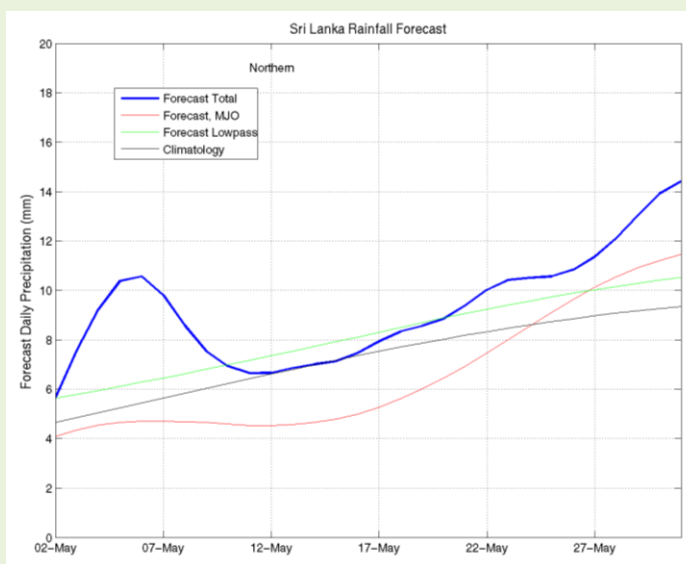
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

