

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 IRI)

12 January 2012

FECT BLOG

Follow news at our
website at

<http://www.climate.lk>

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 the previous week (03rd – 10th January) rainfall ranged between 5 mm-100 mm. Maximum of 100 mm was observed on 9th January 2012 for Gampaha, Colombo and Ampara districts. Between 4th-9th January most of the districts received rainfall compared to 3rd & 10th January.

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 less than 5 mm for the entire island.

IMD WRF Model Forecast & IRI forecast For the 13th January WRF model predicts rainfall ranging between 7-35 mm for Galle district and shall spread towards Rathnapura, Badulla and Batticaloa with a rainfall of about 2.5 mm. The model predicts rainfall about 2.5 mm for the Ampara and Jaffna districts for the 14th January.

1 Month Prediction: Rainfall shall decrease drastically between the 11th- 13th & it shall increase gradually during 15th-24th January 2012. Thereafter rainfall shall decrease gradually till 5th February, thereon it will increase again. For the western slopes there shall be high rainfall throughout the month. Rainfall shall decrease drastically during 11th-14th January & shall increase gradually till 27th. Thereafter rainfall shall decrease gradually till 5th February & thereon it will increase again. For the eastern slopes rainfall is not predicted for the periods of 11th-19th January & 28th January – 11th February. During 19th-24th January rainfall shall increase gradually & thereon it shall decrease. For the northern regions rainfall is not predicted for the periods of 11th-20th January & 3rd-5th February. Rainfall shall increase during 20th-26th January & shall decrease dramatically during 26th January-3rd February. On 5th February onwards rainfall shall increase again.

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

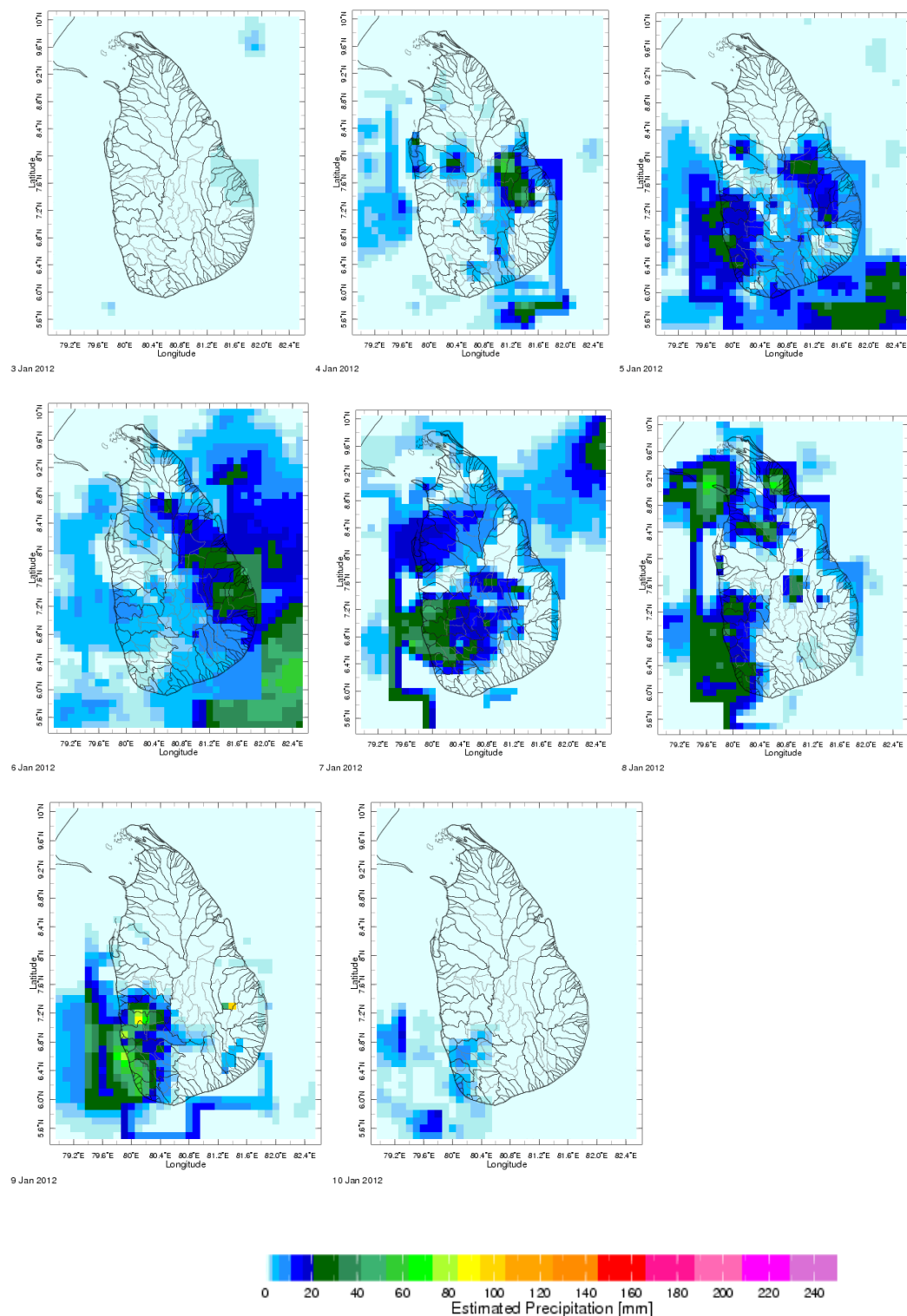
- Daily Satellite Derived Rain fall Estimates
- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

2. Predictions

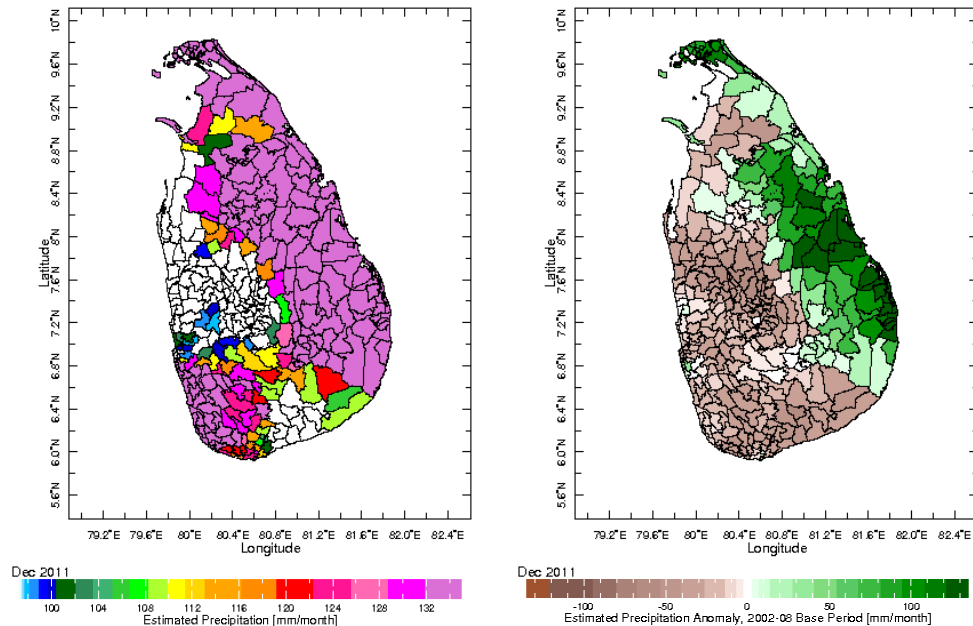
- NCEP GFS Ensemble 1-7 day predictions, NOAA, CPC, USA
- IMD WRF Model Forecast
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

1. Monitoring

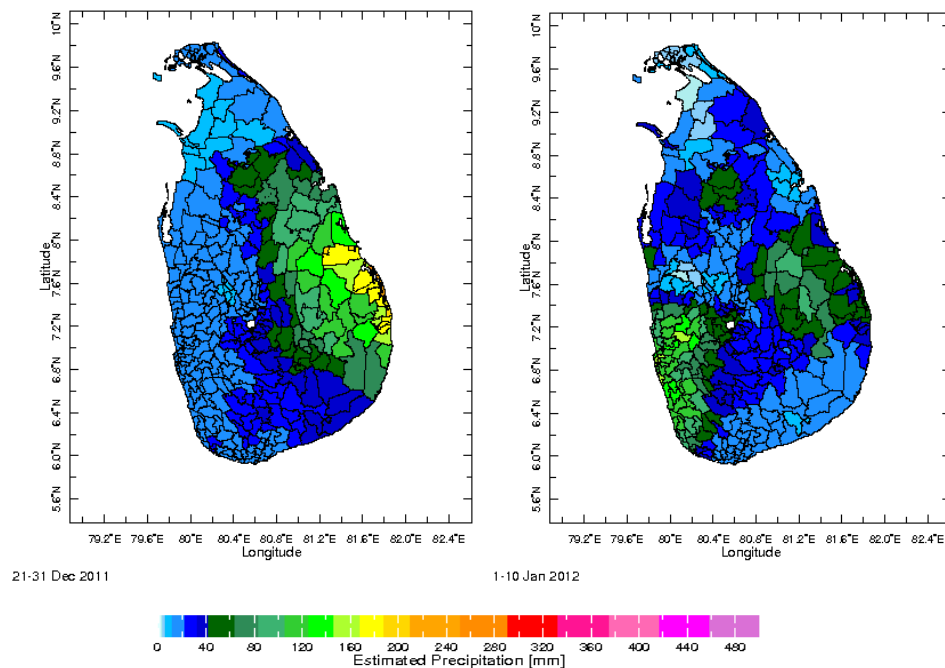
a) Daily Satellite Derived Rainfall Estimate Maps: 03rd January – 10th January, 2011 (Left-Right, Top-Bottom)



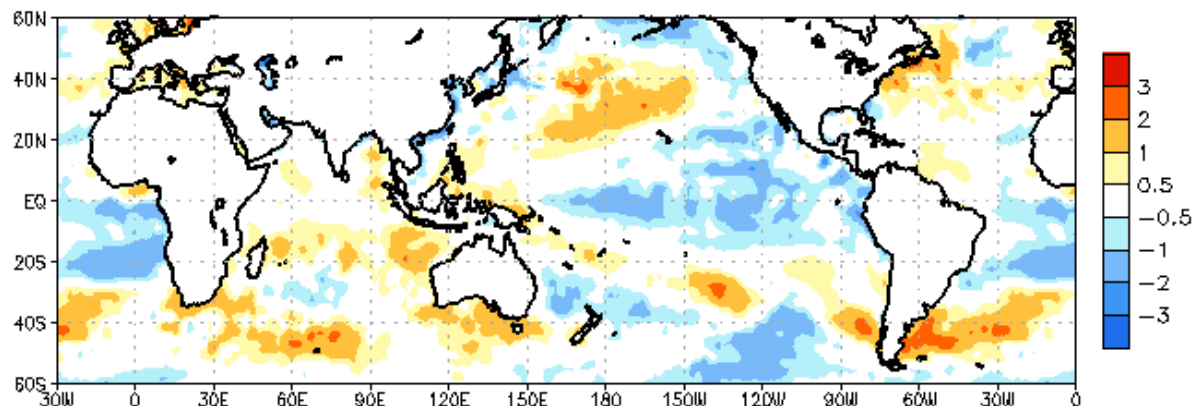
b) Monthly Satellite Derived Rain fall Estimates for December 2011 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 December, 2011 & 1-10 January, 2012)



d) Weekly Average SST Anomalies

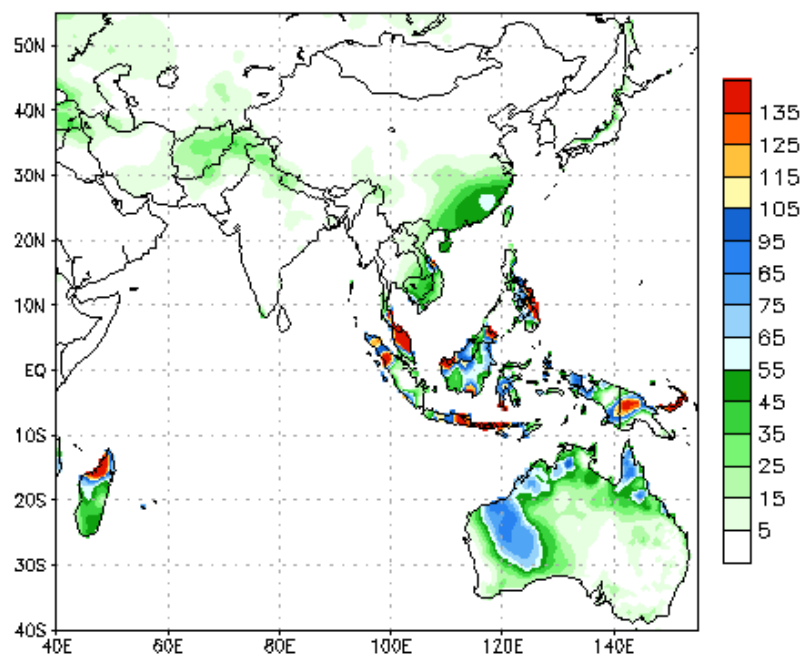


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 04th January, 2012

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.



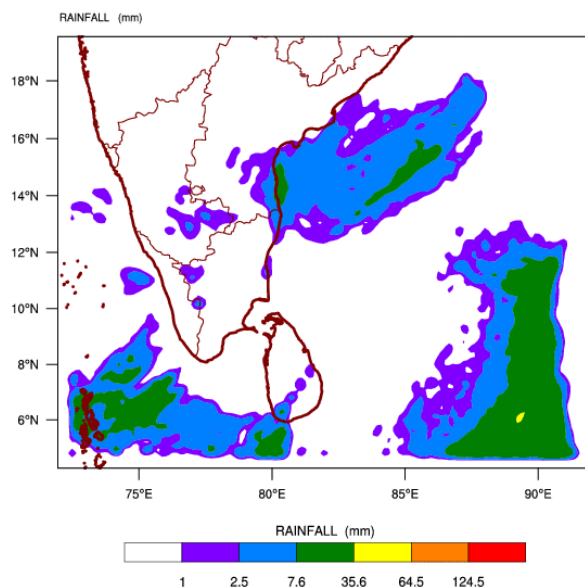
During next week, an accumulated rainfall of less than 5mm is predicted for the entire Island.

Source – NOAA Climate Prediction Center

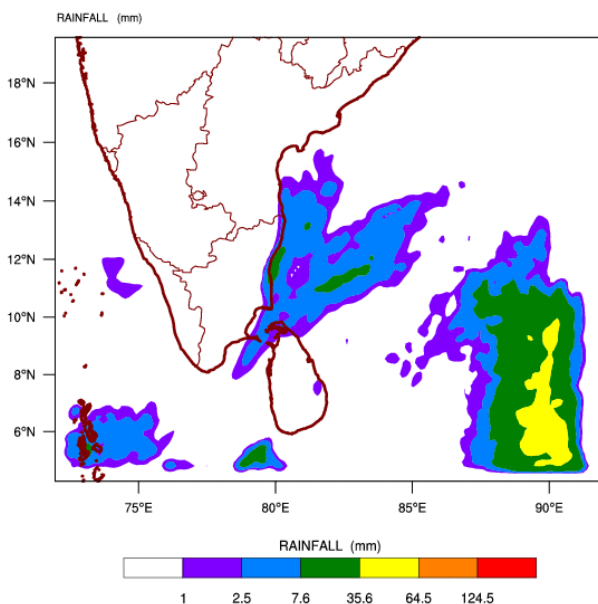
Map: Predicted accumulation of rainfall. (10th – 16th Jan, 2012 week)

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

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 11-01-2012 valid for 03 UTC of 13-01-2012



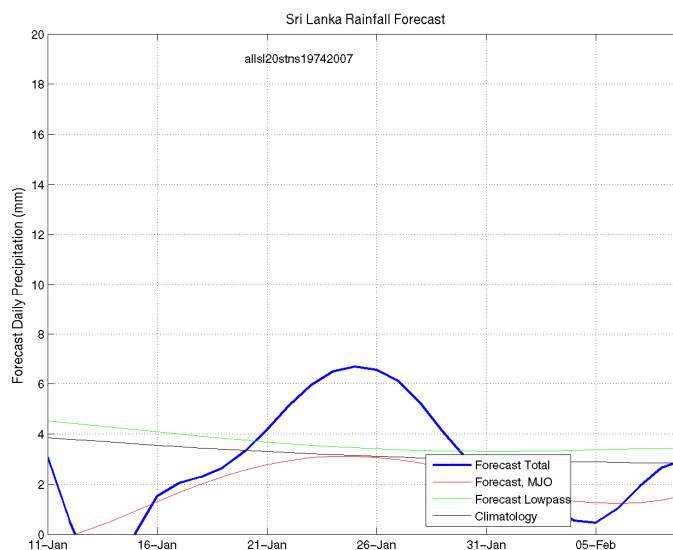
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 11-01-2012 valid for 03 UTC of 14-01-2012



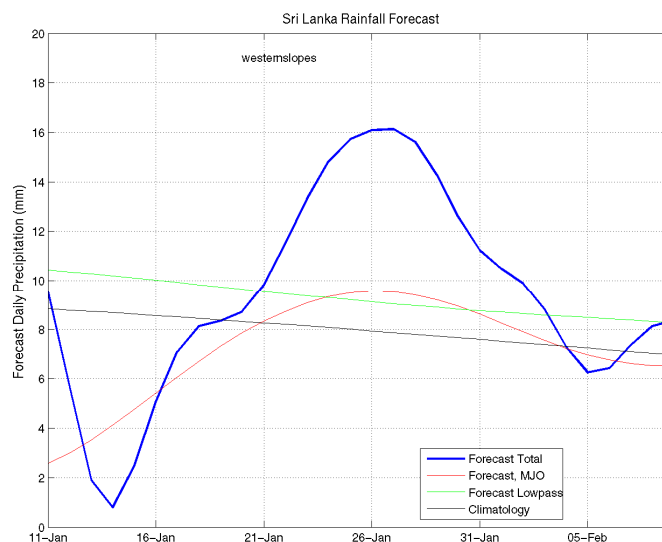
c) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 12th January, 2012

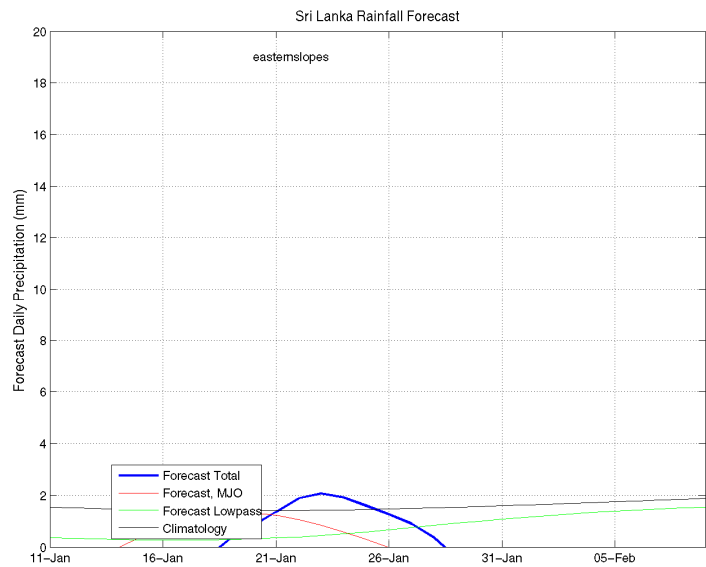
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



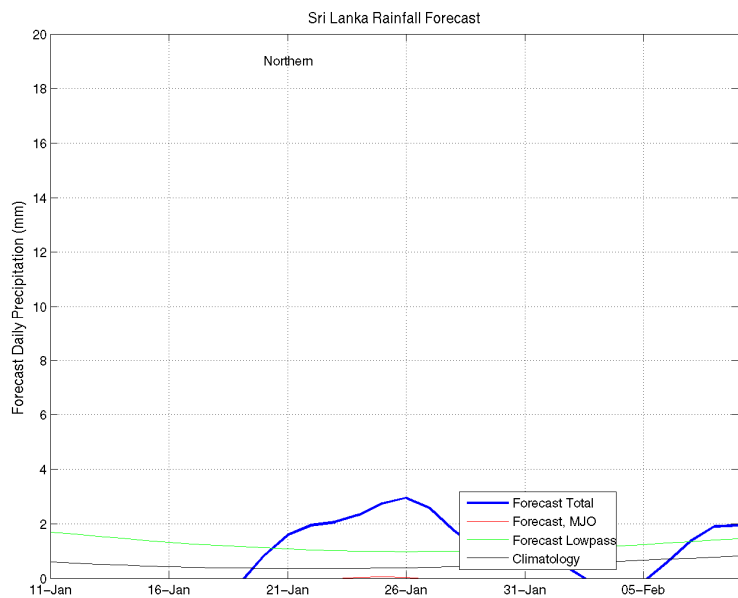
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

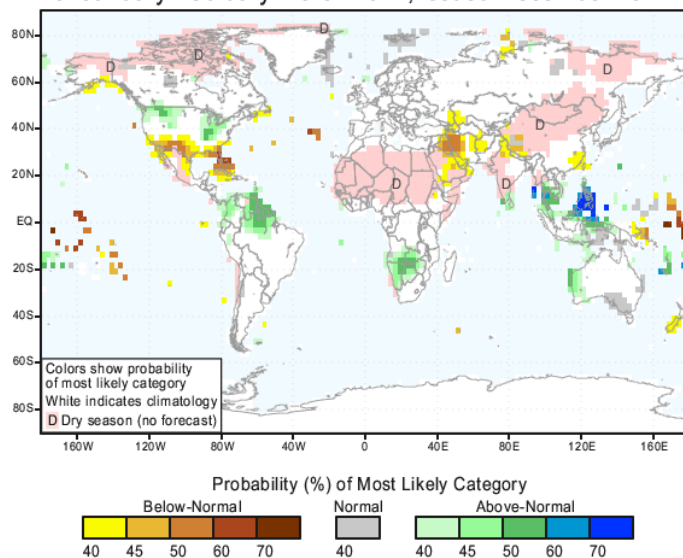


Northern Region (Rainfall Scale- from 0-20 mm/day)



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

