

## Experimental Climate Monitoring and Prediction

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### FECT BLOG

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

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

### FECT WEBSITES

<http://www.climate.lk> and  
<http://www.tropicalclimate.org/>

### January 8, 2015 PACIFIC SEAS STATE

During December 2014 through early January 2015 the SST exceeded thresholds for weak Niño conditions, although only some of the atmospheric variables indicate an El Niño pattern. Most of the ENSO prediction models indicate weak El Niño conditions during the December-February season in progress, continuing through most or all of northern spring 2015.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

Neutral SST was observed in the sea around Sri Lanka.

### MJO STATE

MJO is in Phase 6 in Maritime Continent and therefore shall suppress the rainfall in Sri Lanka.

### Highlights

#### Monitoring and Predictions:

Less rainfall was observed throughout the country during the past week. Maximum rainfall for the week was observed in Mahiyangana area on 6<sup>th</sup> January which was up to 30mm. Rainfall is expected to increase during 16<sup>th</sup> to 27<sup>th</sup> of January.

#### Summary

#### Monitoring

**Weekly Monitoring:** The highest rainfall for the week was observed on 6<sup>th</sup> in Mahiyangana averaging upto 30mm. On the same day rainfall was observed in Puttalam and south-west region of the island. During 7<sup>th</sup> to 12<sup>th</sup> no rainfall was observed in any part of the country.

**Monthly Monitoring:** During December an average rainfall of 8mm to 20mm was observed throughout the country with higher precipitation in the central, north-eastern and eastern regions of the island. Highest rainfall in December was observed in Batticaloa district. Decadal rainfall average was significantly decreased during 1<sup>st</sup> to 10<sup>th</sup> January with compared to the last week of December.

#### Predictions

**14 day prediction:** NOAA NCEP models predict that the eastern region shall receive rainfall around 45mm during 14<sup>th</sup> to 20<sup>th</sup> January. Rainfall is expected to increase in eastern region of the country during 21<sup>st</sup> to 27<sup>th</sup> January resulting in high rainfall (more than 125mm in total).

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model eastern, central and south west regions shall receive slight rainfall on 16<sup>th</sup> January. Also slight amount of rainfall is expected in southern region on 17<sup>th</sup> January. No significant rainfall is expected in any part of the country during the period 13<sup>th</sup>-18<sup>th</sup> of January.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for December to February, the total 3 month precipitation shall be climatological. The 3 month average temperature has more than 70% likelihood of being in the above-normal tercile during this period.

### Inside this Issue

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- 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 1-14 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

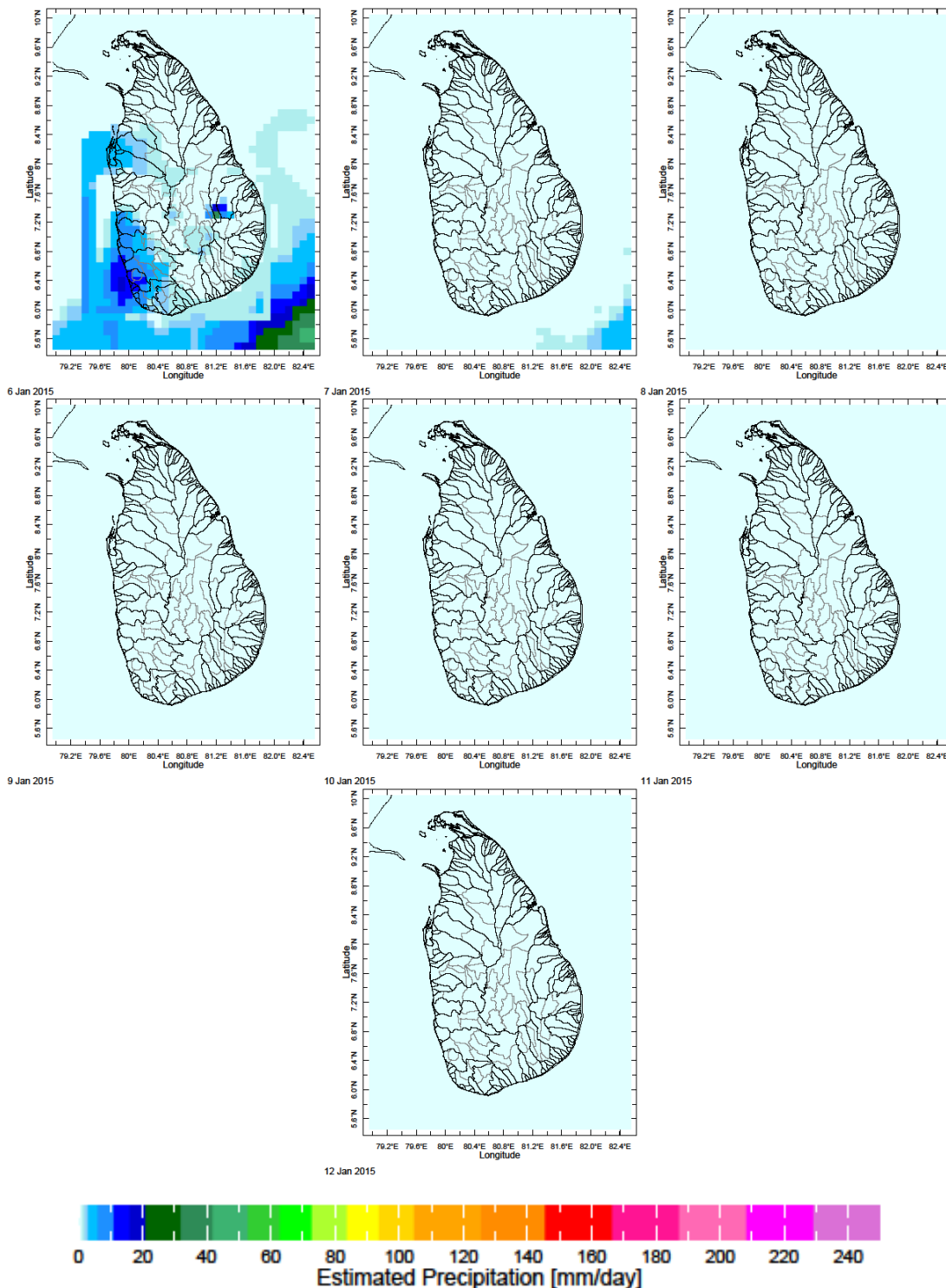
<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

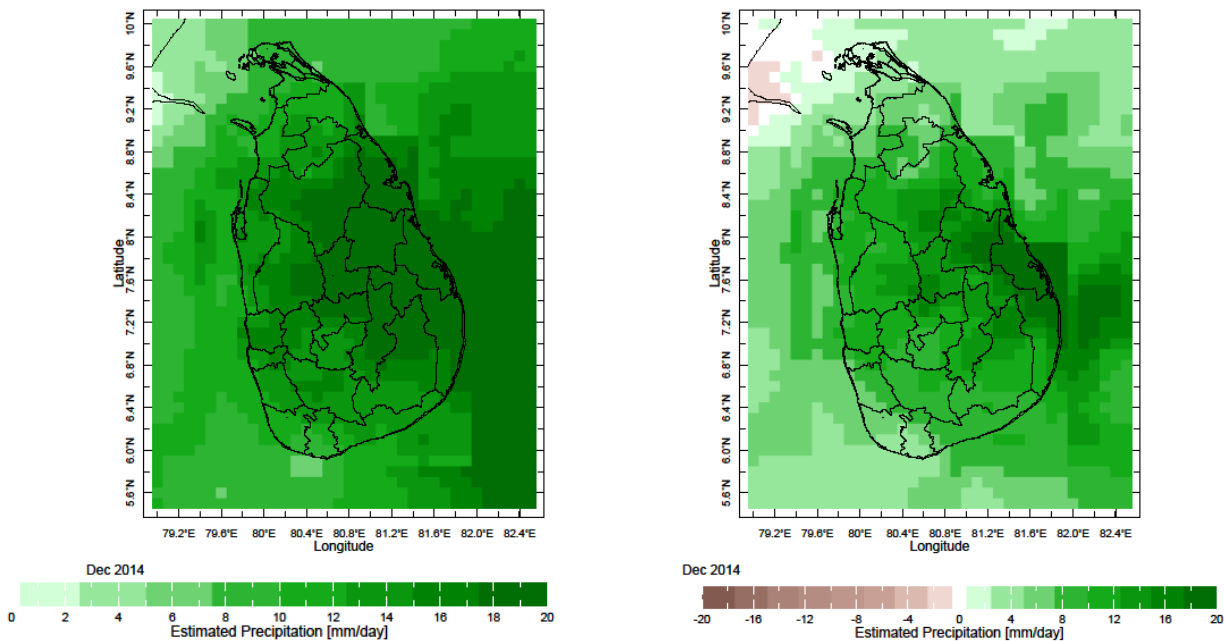
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

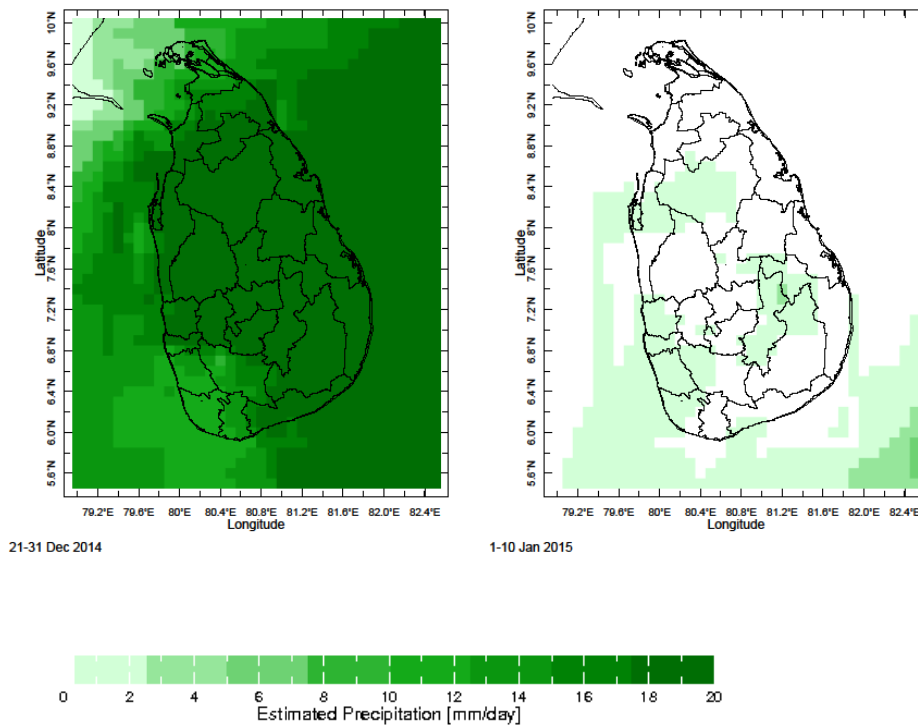
a) **Daily Satellite Derived Rainfall Estimate Maps: 6<sup>th</sup> January 2015 – 12<sup>th</sup> January 2015 (Left-Right, Top-Bottom)**



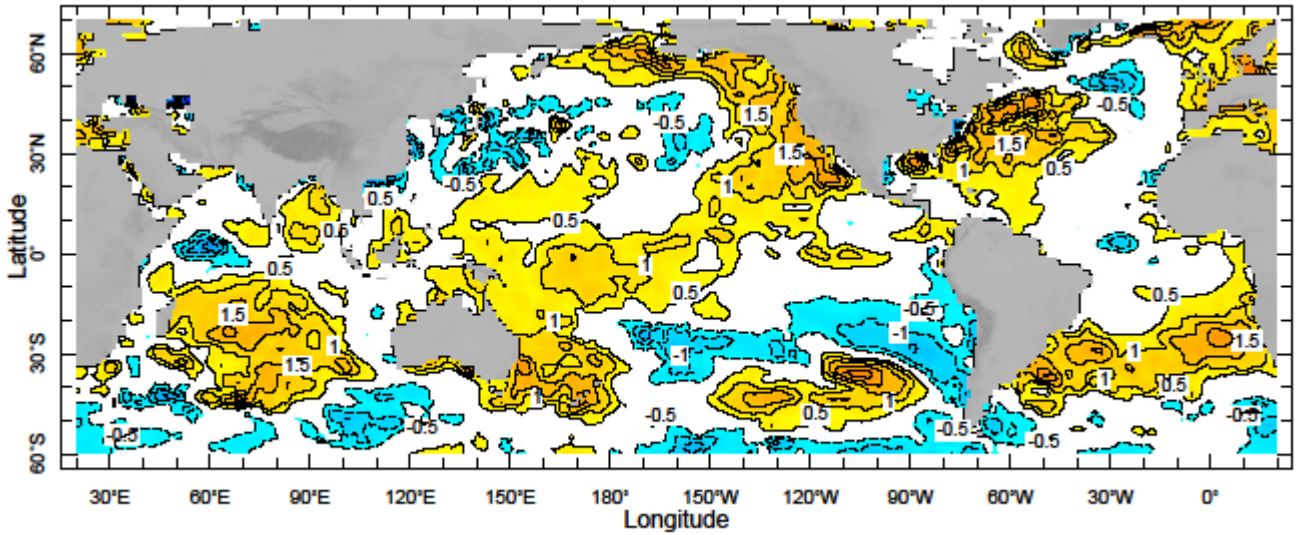
**b) Monthly Satellite Derived Rainfall Estimates for December 2014 (Average – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 Dec, 2014 – 1-10 Jan 2015)**



**d) Weekly Average SST Anomalies**



4-10 Jan 2015



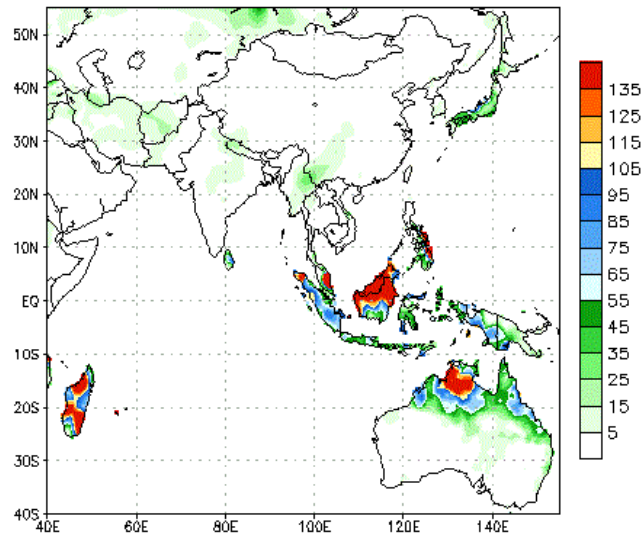
**Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 4<sup>th</sup> – 10<sup>th</sup> January, 2015**

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

## 2. Predictions

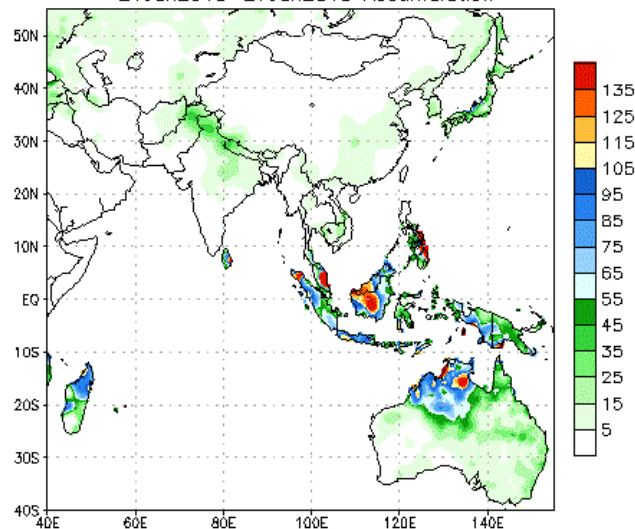
### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 14Jan2015  
14Jan2015-20Jan2015 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 14Jan2015  
21Jan2015-27Jan2015 Accumulation

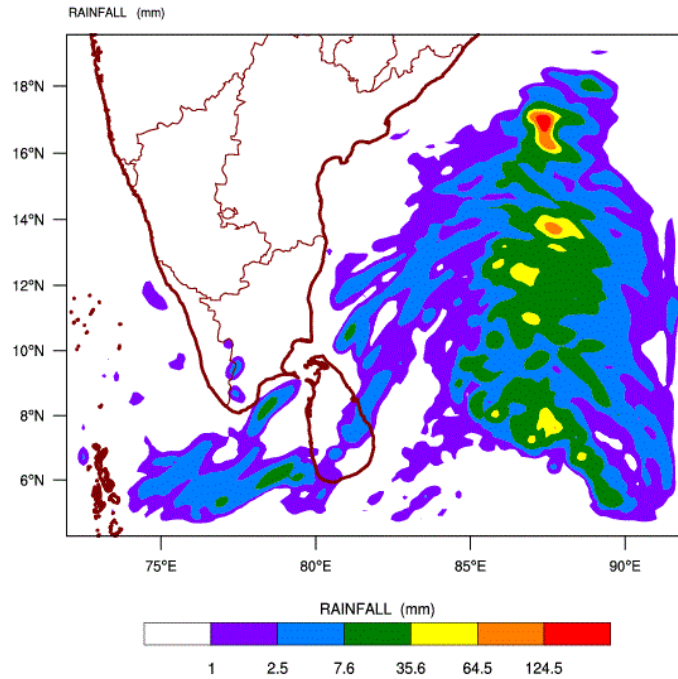


Bias correction based on last 30-day forecast error

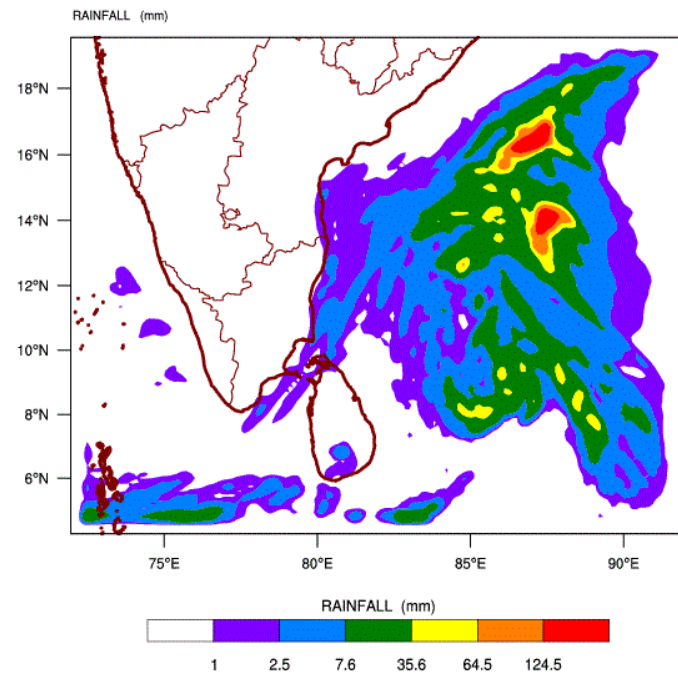
Source – NOAA Climate Prediction Center

**b) WRF model forecast from Regional Meteorological Center, Chennai of Indian Meteorological Department**

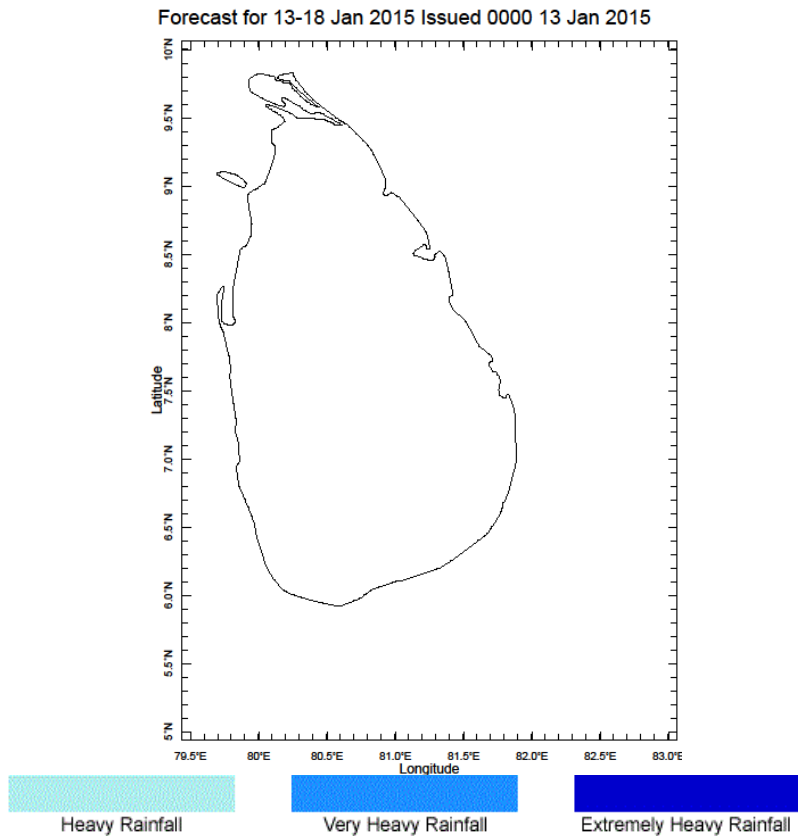
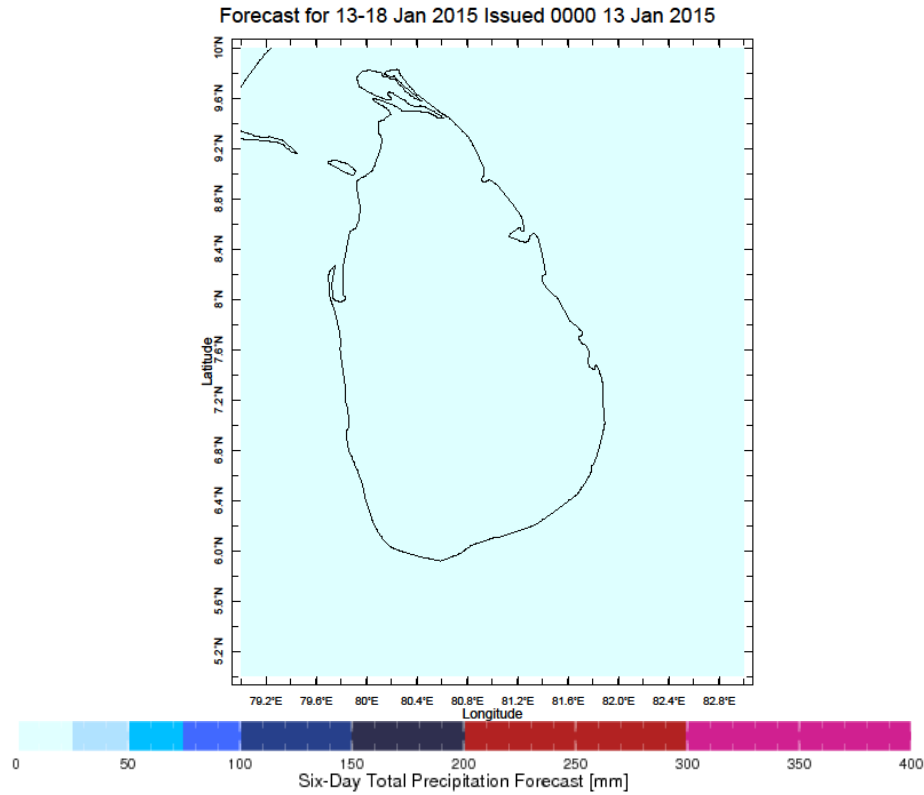
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 13-01-2015 valid for 03 UTC of 15-01-2015



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 13-01-2015 valid for 03 UTC of 16-01-2015

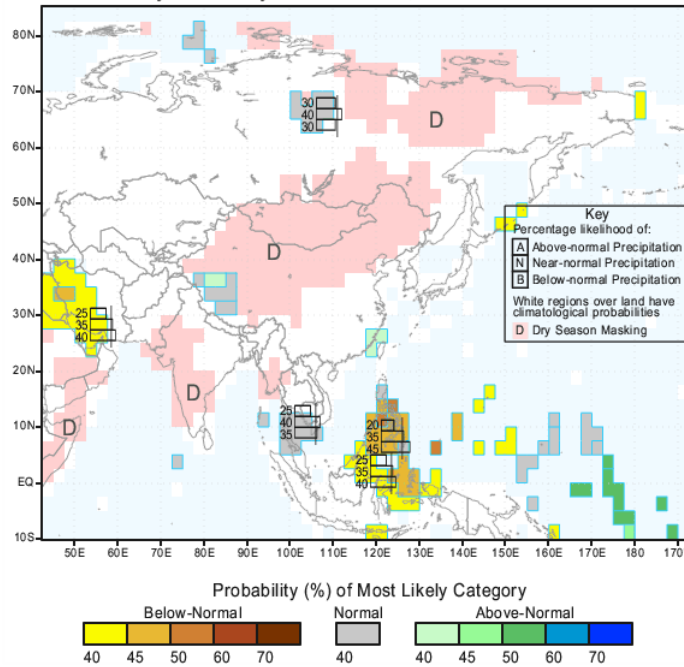


**c) Weekly Precipitation Forecast for 13<sup>th</sup> – 18<sup>th</sup> January (Precipitation Forecast in Context Map Tool, IRI)**



*e) Seasonal Rainfall and Temperature Predictions from IRI*

IRI Multi-Model Probability Forecast for Precipitation  
for January-February-March 2015, Issued December 2014



IRI Multi-Model Probability Forecast for Temperature  
for January-February-March 2015, Issued December 2014

