

Experimental Climate Monitoring and Prediction

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FECT BLOG

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

FECT WEBSITES

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

December 18, 2014 PACIFIC SEAS STATE

During November through early December 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 5-Maritime Continent and therefore shall suppress the rainfall in Sri Lanka.

Highlights

Monitoring and Predictions:

As predicted in the previous week eastern regions of Sri Lanka along with the adjacent sea received extremely heavy rainfall. On the 25th and 26th of December the entire country received rainfall reaching up to 200 mm. Thereafter a decrease in the rainfall was observed. During the next two weeks rainfall is predicted to be lower than the previous weeks, but there shall be high rainfall in the eastern coast.

Summary

Monitoring

Weekly Monitoring: High precipitation was observed throughout the week 24th – 30th December. On the 24th up to 120 mm rainfall was observed in Kurunegala. On the same day high rainfall was observed in south-eastern region of Sri Lanka while the rest of the country received rainfall up to 50 mm. Highest rainfall during this week was observed on the 25th. Extreme rainfall (up to 200 mm) was observed in Eastern region and the rest of the country received up to 120 mm rainfall except the northern region which only experienced light rainfall. Thereafter rainfall gradually decreased and completely ceased by 30th of December.

Monthly Monitoring: An average rainfall of 16 mm-18 mm was observed throughout the country with higher precipitation observed in the north-eastern regions of Sri Lanka during November. Highest rainfall during this month was observed in Northern and Eastern provinces. Also the decadal rainfall average was increased from 18 mm to 9 mm within a week.

Predictions

14 day prediction: NOAA NCEP models predict a significant decrease in rainfall in coming two weeks (1st- 13th January 2015). But there shall be further heavy rainfall in the eastern coastal region of the country exceeding 135 mm in magnitude.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, central region of the country shall receive rainfall up to 125 mm with the highest expected in Wasgamuwa area on the 2nd of January. Then on the 3rd rainfall shall decrease with most of the country expected to have light showers. Nuwara Eliya region shall receive up to 35 mm rainfall.

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.

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- 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

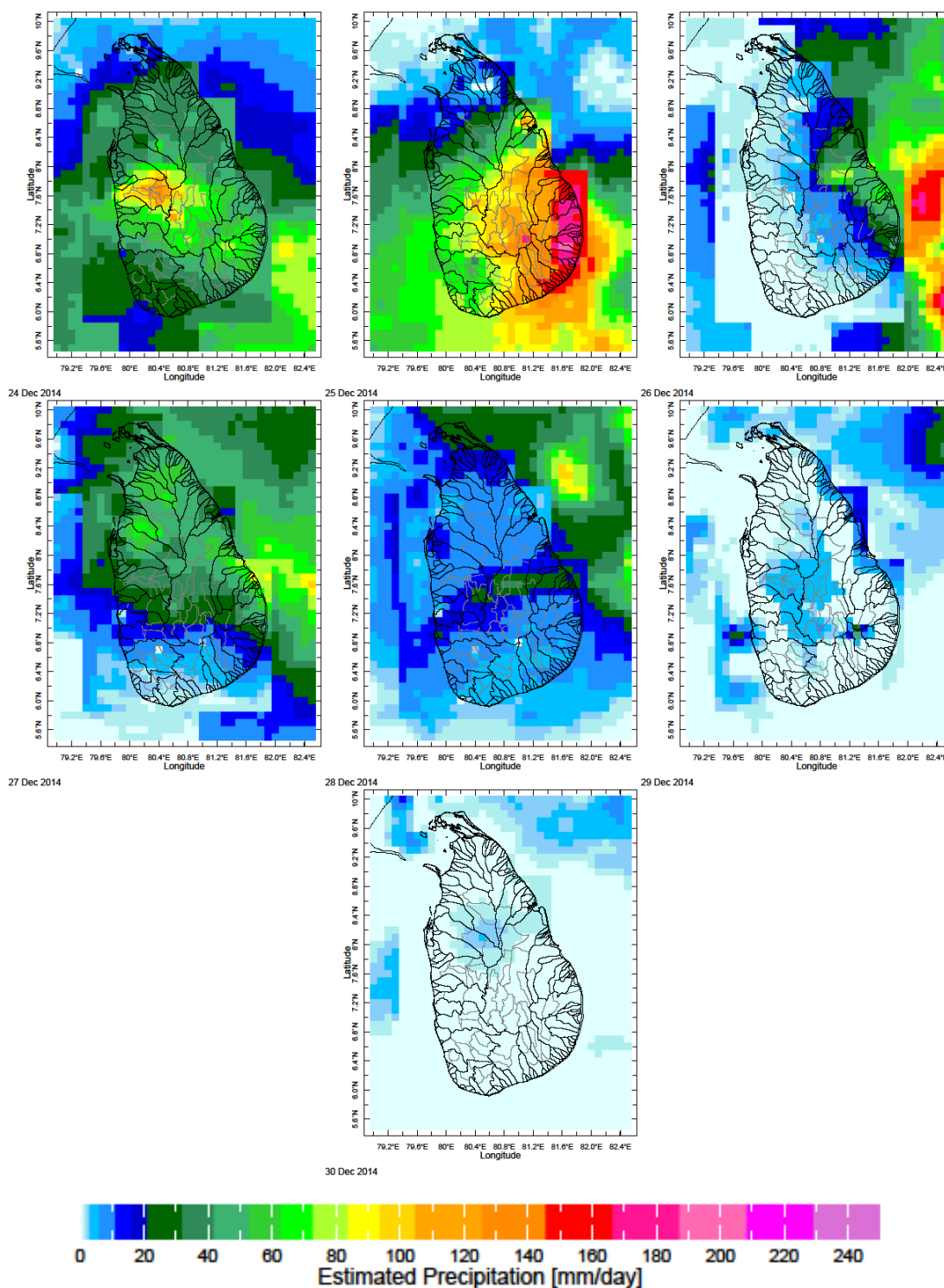
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

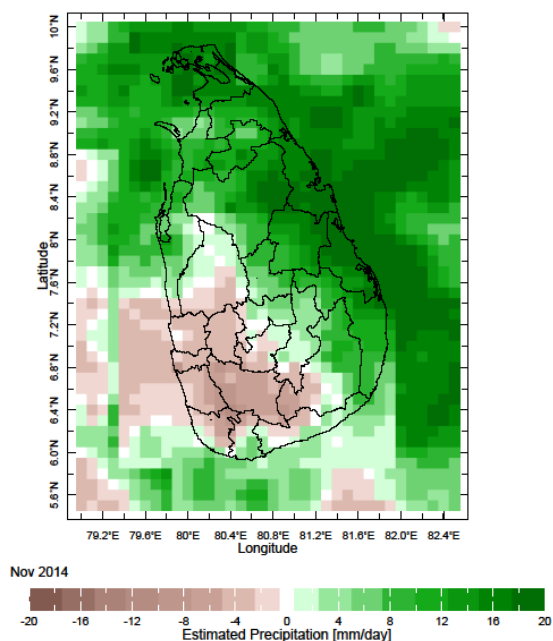
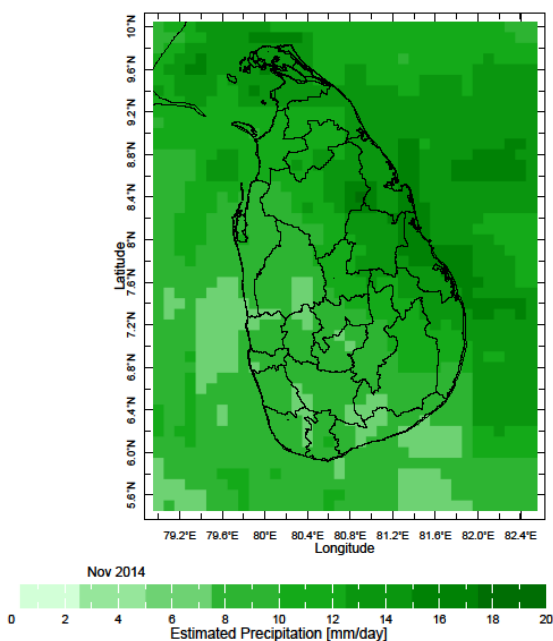
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

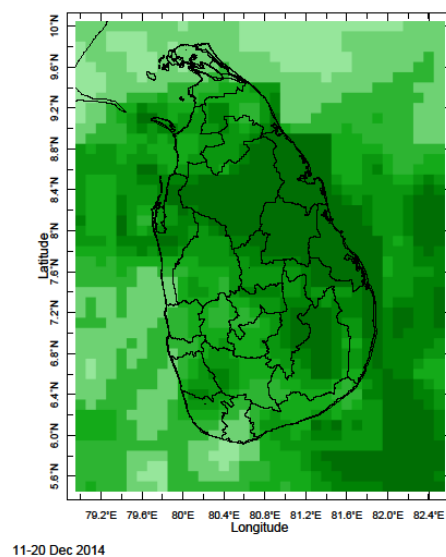
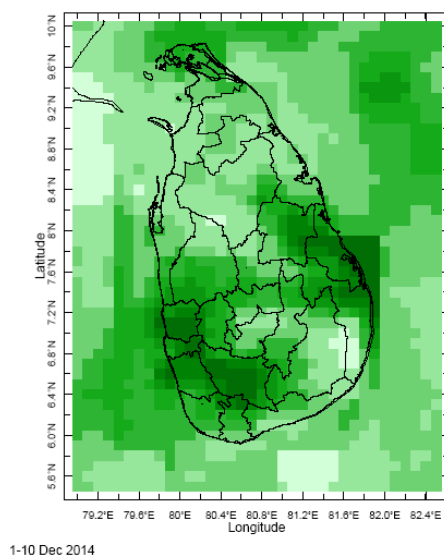
a) Daily Satellite Derived Rainfall Estimate Maps: 24th – 30th December 2014 (Left-Right, Top-Bottom)



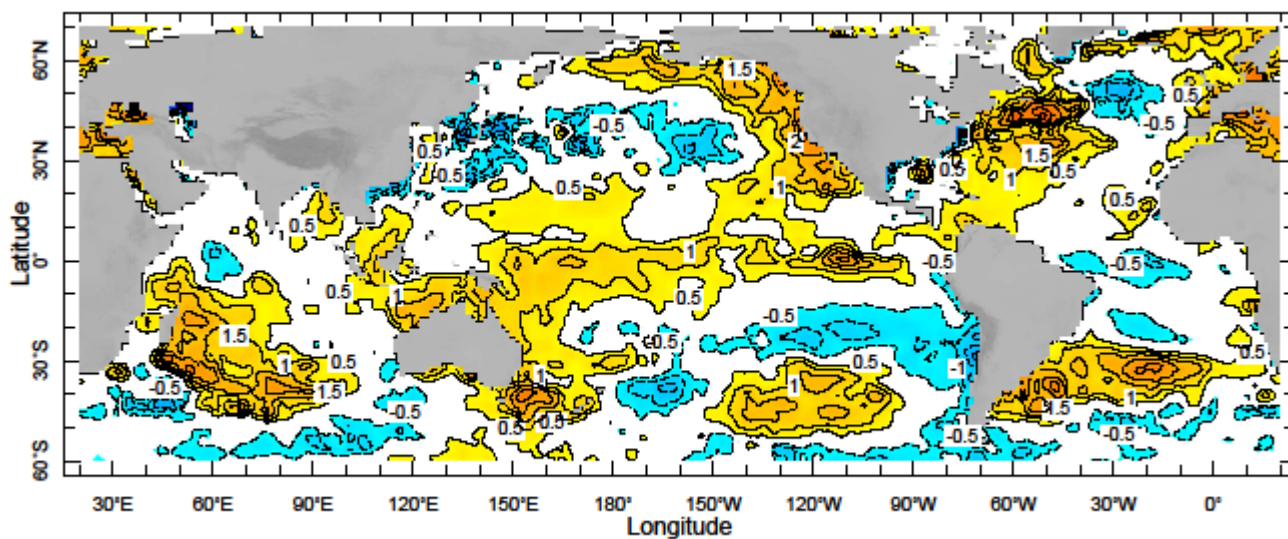
b) Monthly Satellite Derived Rainfall Estimates for November 2014 (Average – Left and Anomaly - Right)



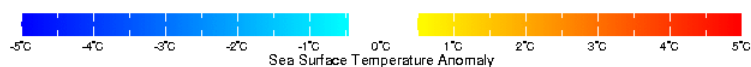
c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (1-10 & 11-20 Dec, 2014)



d) Weekly Average SST Anomalies



21-27 Dec 2014



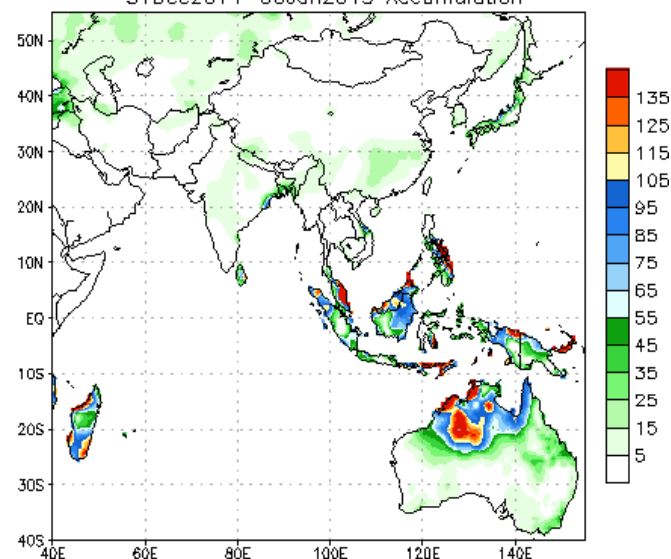
Weekly Average SST Anomalies ($^{\circ}\text{C}$), 21st – 27th December, 2014

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

2. Predictions

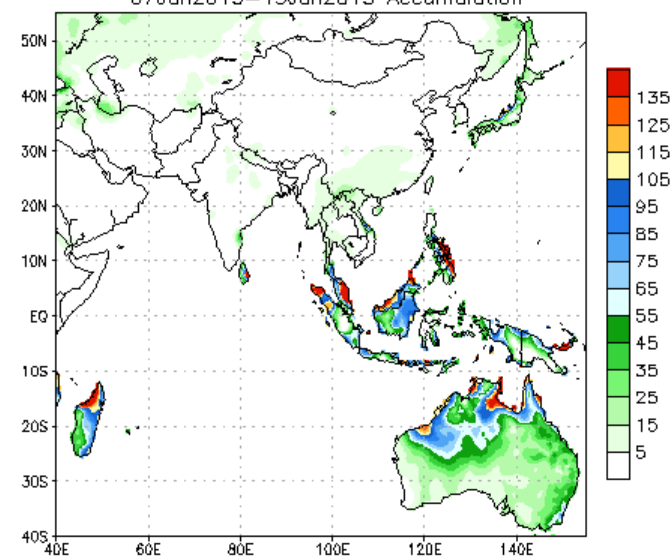
a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 31Dec2014
31Dec2014-06Jan2015 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 31Dec2014
07Jan2015-13Jan2015 Accumulation

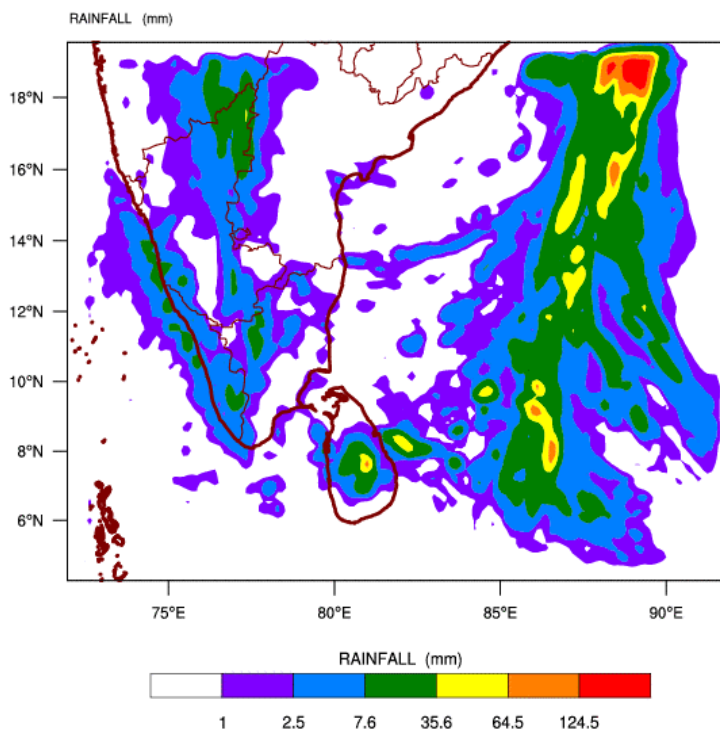


Bias correction based on last 30-day forecast error

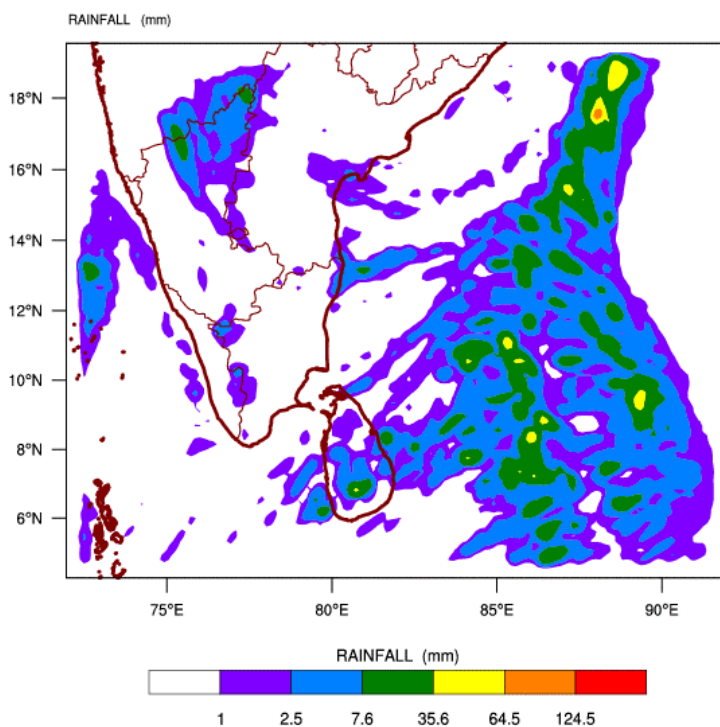
Source – NOAA Climate Prediction Center

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 31-12-2014 valid for 03 UTC of 02-01-2015

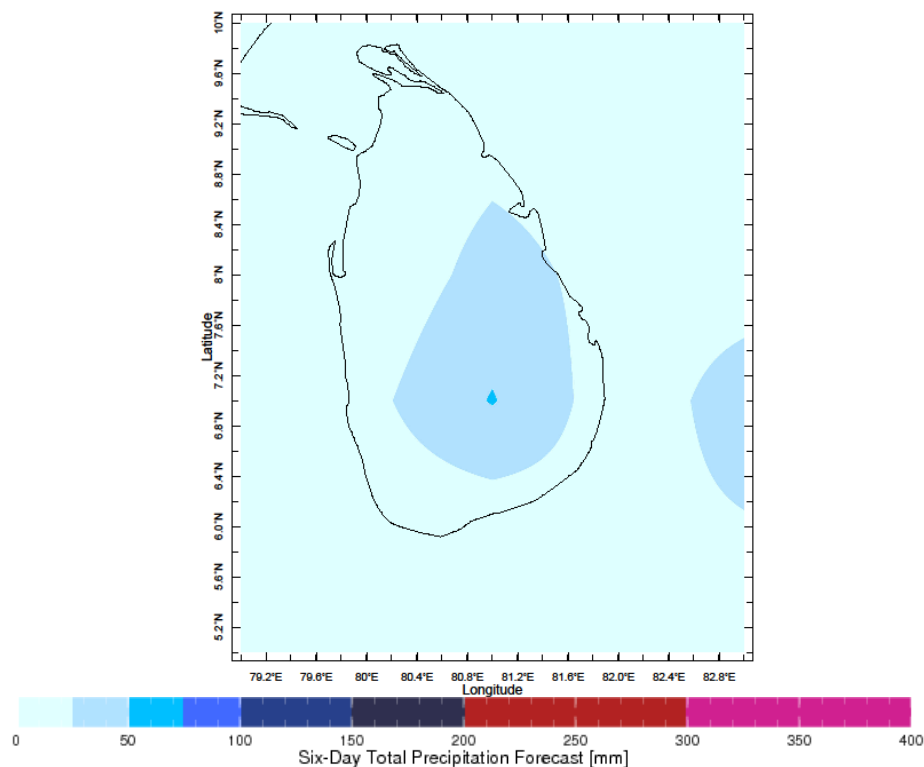


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 31-12-2014 valid for 03 UTC of 03-01-2015

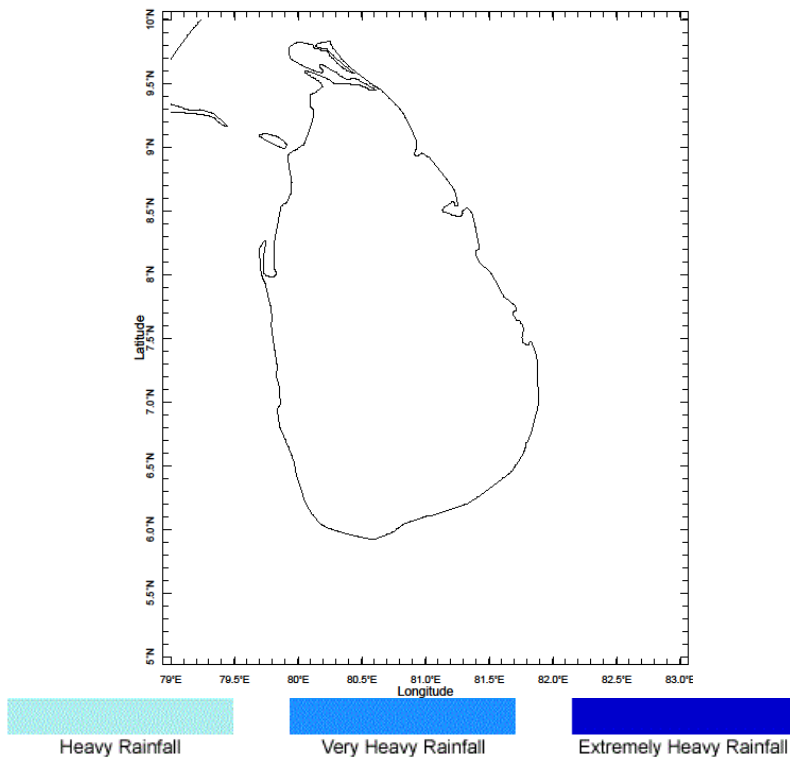


c) Weekly Precipitation Forecast for 31st December- 5th January (Precipitation Forecast in Context Map Tool, IRI)

Forecast for 31 Dec 2014 - 5 Jan 2015 Issued 0000 31 Dec 2014

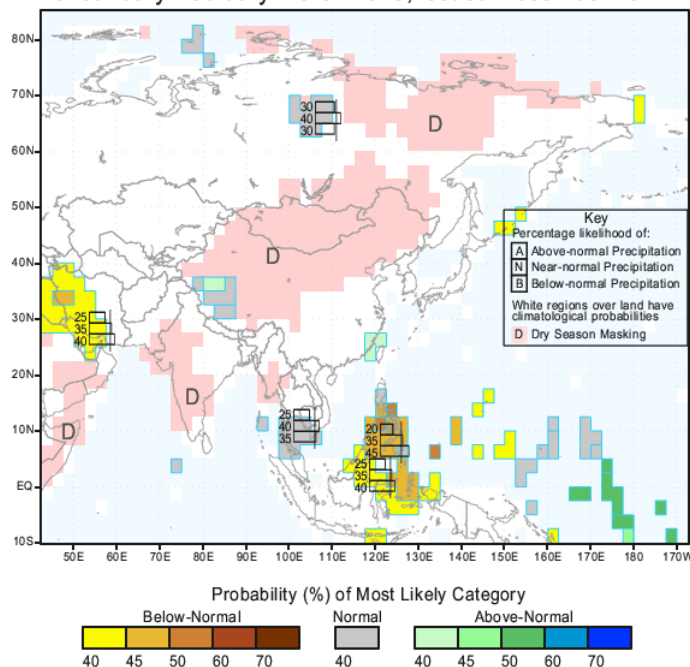


Forecast for 31 Dec 2014 - 5 Jan 2015 Issued 0000 31 Dec 2014



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

