

Experimental Climate Monitoring and Prediction

by: Erandathi Ekanayake, Prabodha Agalawatte, Sewwandhi Chandrasekara, Zeenas Yahiya,
Lareef Zubair and Michael Bell (FECT and IRI¹)

13 November 2014

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/>

06 November, 2014

PACIFIC SEAS STATE

During September through October the observed ENSO conditions retreated from those of a borderline El Niño to a warmish ENSO-neutral state.

However, most of the ENSO prediction models continue to indicate development of weak El Niño conditions during the October-December season in progress, peaking at weak strength during winter 2014-15 and lasting through most of northern spring 2015.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Around 0.5°C below average sea surface temperature was observed towards north-east coast.

MJO STATE

MJO is in Phase 8 in Western Hemisphere and therefore shall slightly enhance the rainfall in Sri Lanka.

Highlights

Monitoring and Predictions:

Dry conditions were observed throughout the country during the previous week and rainfall shall increase significantly throughout the country during next week. The north-east sea region of Sri Lanka shows a below average sea surface temperature.

Summary

Monitoring

Weekly Monitoring: On 5th of November slight rain was observed within the country. From 6th November to 9th November no significant rainfall was observed in the entire country. On 10th November around 20 mm rainfall was observed in the area surrounding Dambulla. Rainfall was observed in the entire country on the 11th with more rain observed in the western half of the country reaching up to 30- 40 mm.

Monthly Monitoring: An average rainfall of 14 mm-16 mm was observed throughout the country with higher precipitation observed in the south-western regions of Sri Lanka during October. Highest rainfall during this month was observed in Uva, Sabaragamuwa and Central provinces. Also the decadal rainfall average was decreased from 18 mm to 4 mm within a week.

Predictions

14 day prediction: The entire country shall receive total rainfall excess of 125 mm during both weeks of 12th-18th November and 19th-25th November.

IMD WRF & IRI Model Forecast: According to the IMD WRF model the entire country shall receive average rainfall around 7.6 mm on 14th and 15th of November. Light rainfall is expected in the entire southern region during 10th-15th November with heavy rainfall in Northern peninsula around 100 mm in average.

Seasonal Prediction As per IRI Multi Model Probability Forecast issued in October for the season November 2014 to January 2015, Rainfall shall remain climatological while the temperature shall be above normal with a high probability.

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

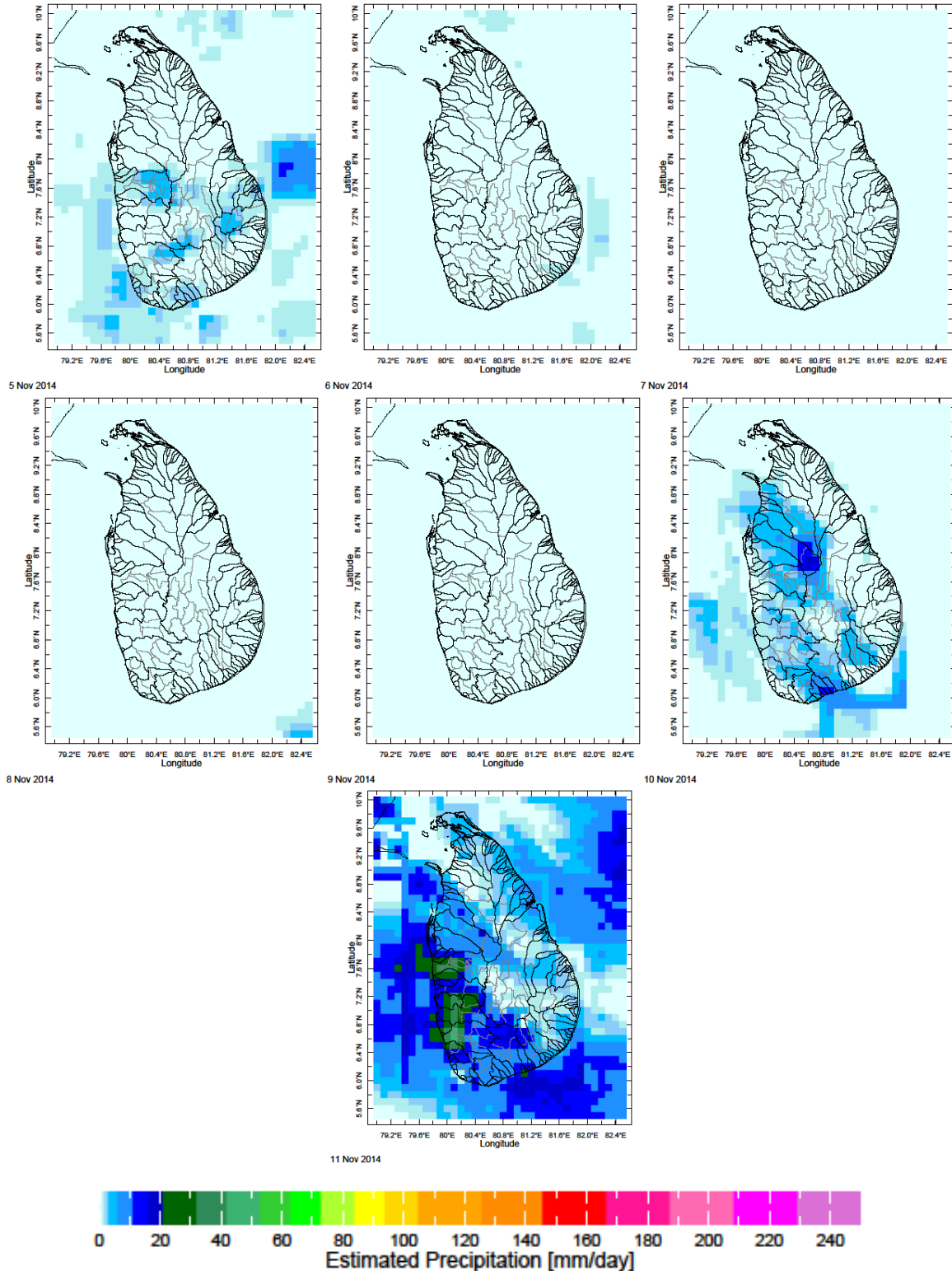
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

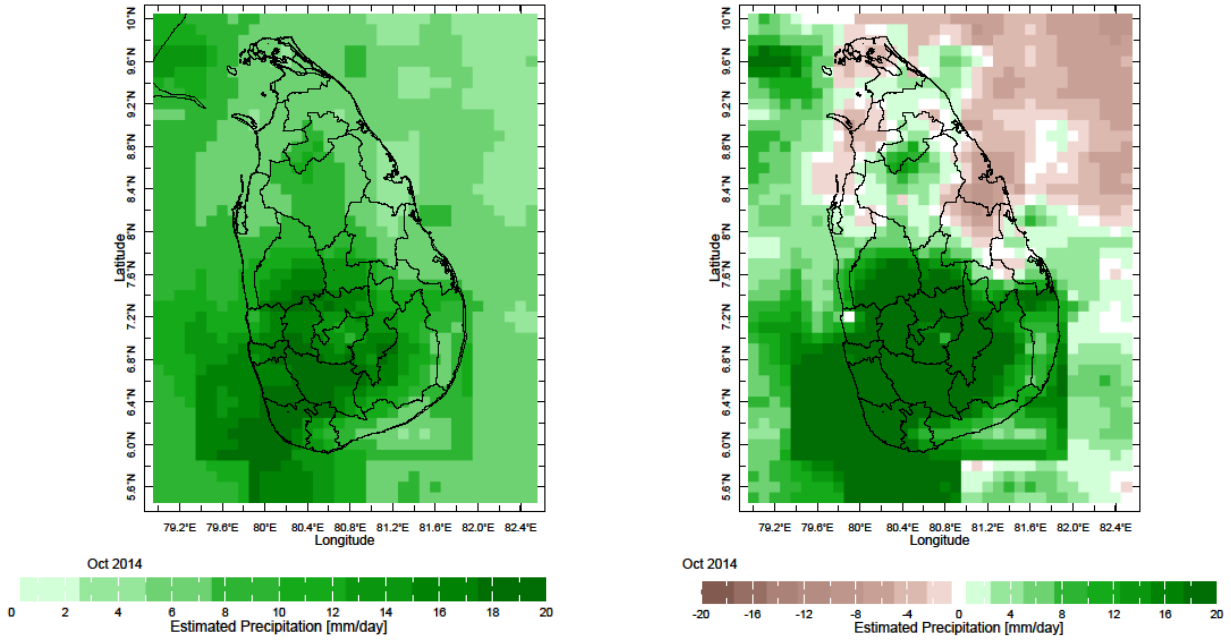
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

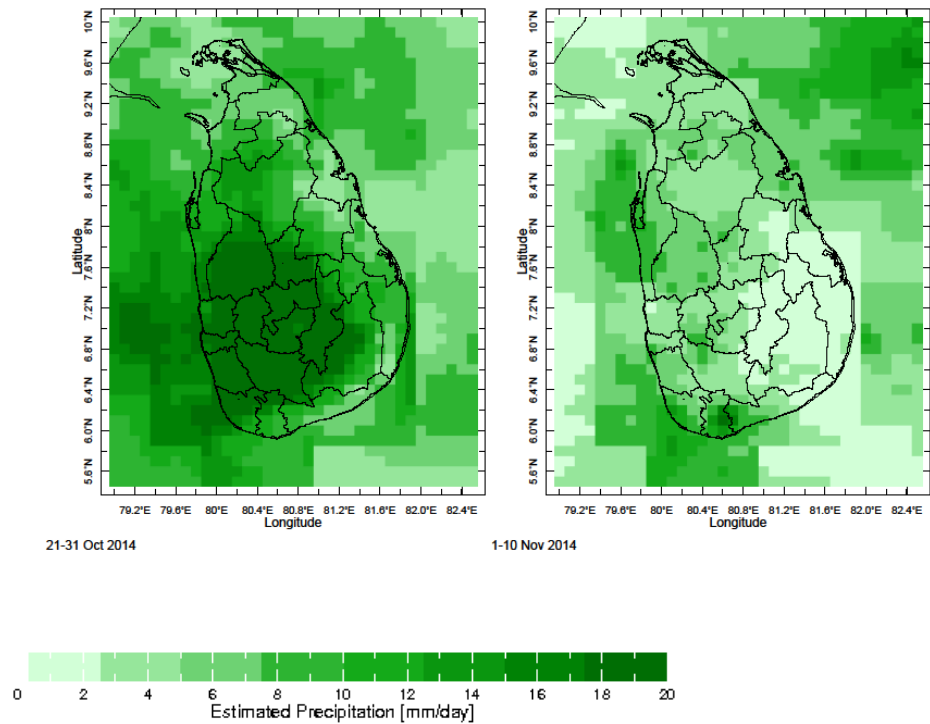
a) Daily Satellite Derived Rainfall Estimate Maps: 5th November-11th November 2014 (Left-Right, Top-Bottom)



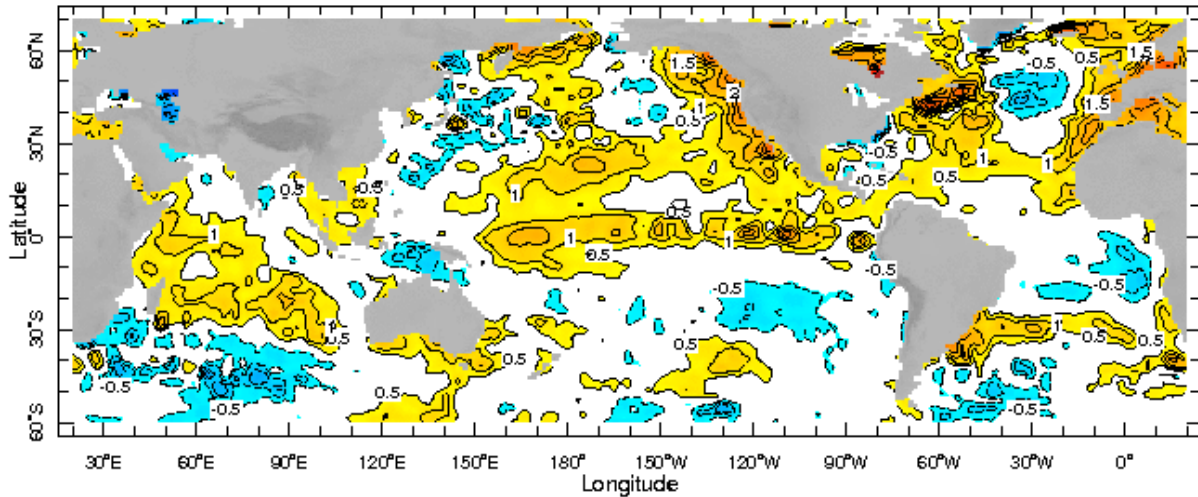
b) Monthly Satellite Derived Rainfall Estimates for October 2014 (Average – Left and Anomaly - Right)



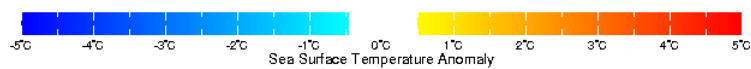
c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 Oct and 1-10 Nov, 2014)



d) Weekly Average SST Anomalies



2-8 Nov 2014



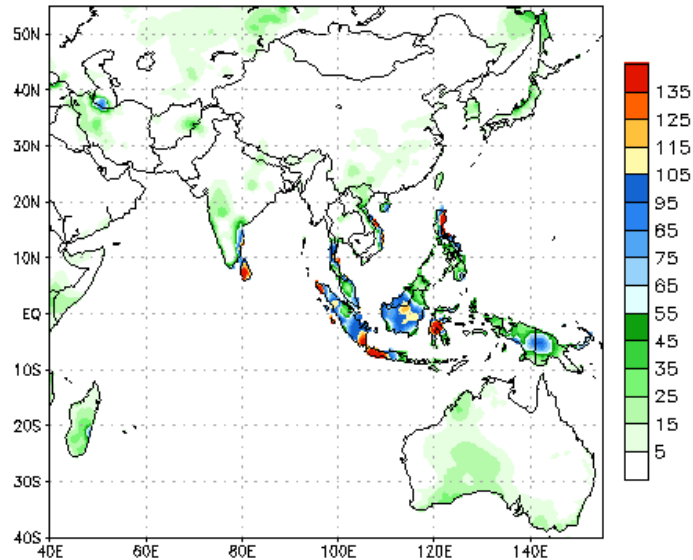
Weekly Average SST Anomalies (°C), 2nd November-8th November, 2014

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

2. Predictions

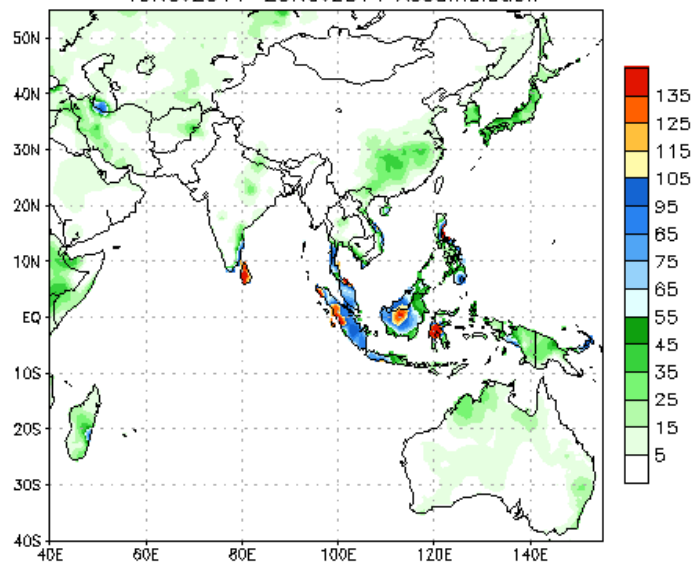
a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 12Nov2014
12Nov2014-18Nov2014 Accumulation



Bias correction based on last 30-day forecast error

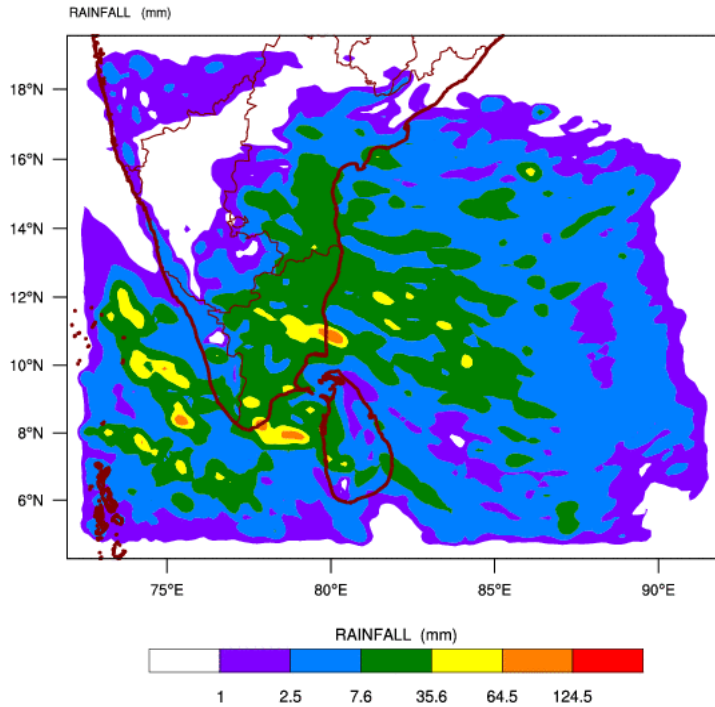
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 12Nov2014
19Nov2014-25Nov2014 Accumulation



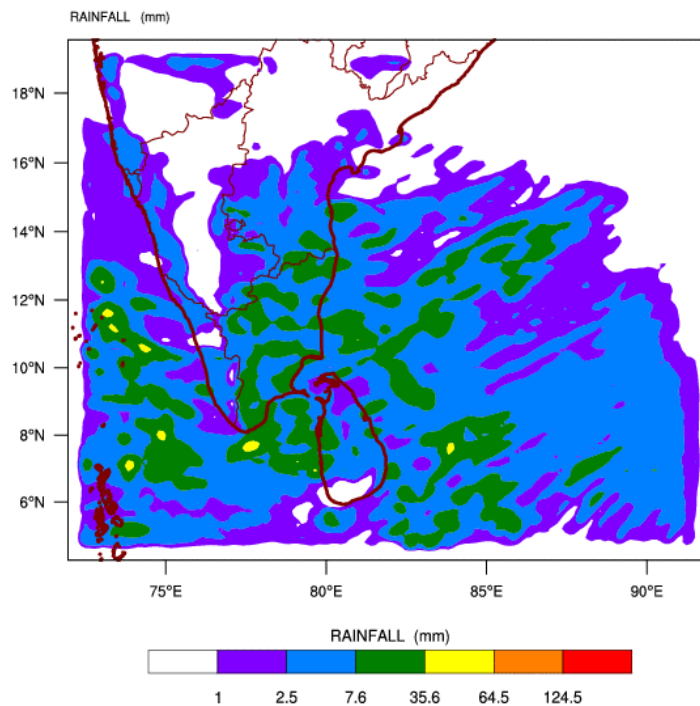
Bias correction based on last 30-day forecast error

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 12-11-2014 valid for 03 UTC of 14-11-2014

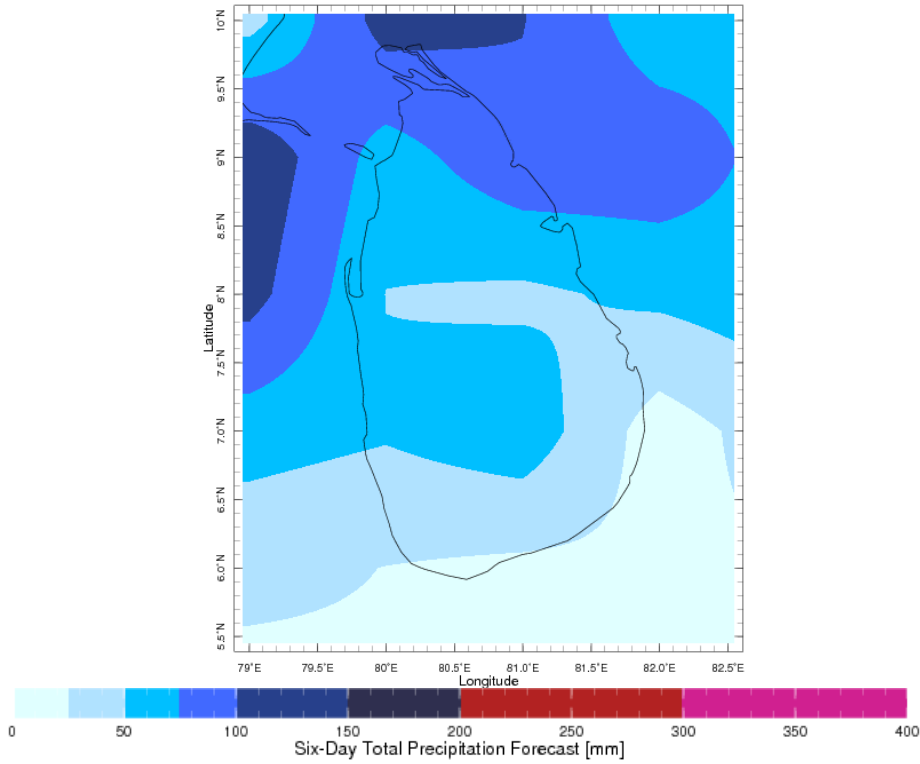


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 12-11-2014 valid for 03 UTC of 15-11-2014

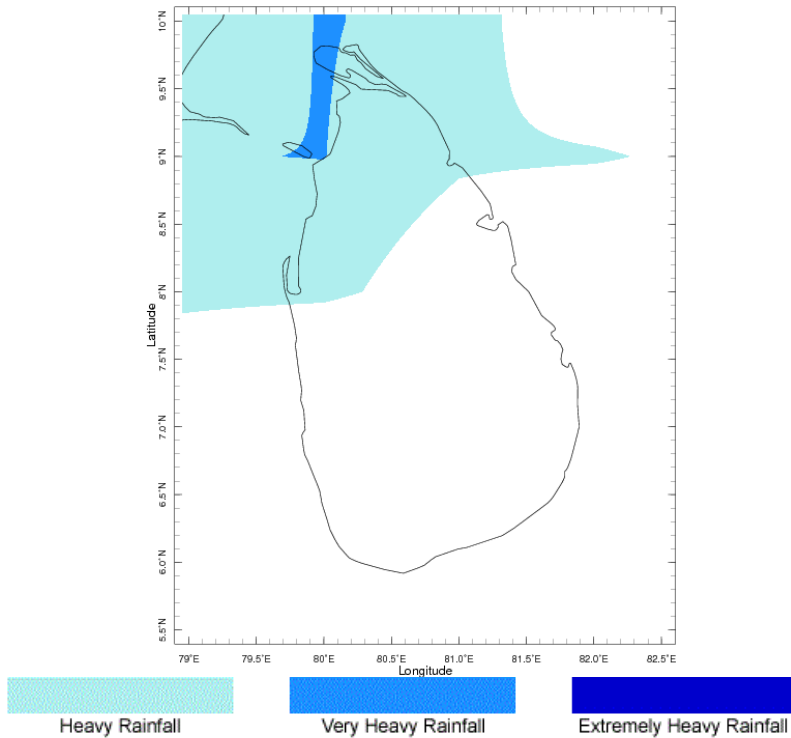


c) Weekly Precipitation Forecast for 10th November – 15th November (Precipitation Forecast in Context Map Tool, IRI)

Forecast for 10-15 Nov 2014 Issued 0000 10 Nov 2014

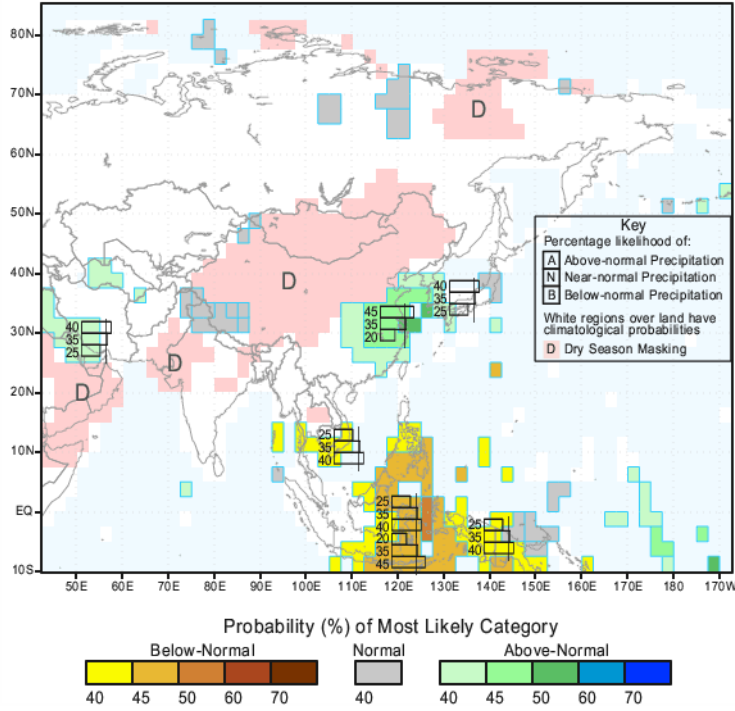


Forecast for 10-15 Nov 2014 Issued 0000 10 Nov 2014



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for November-December-January 2015, Issued October 2014



IRI Multi-Model Probability Forecast for Temperature
for November-December-January 2015, Issued October 2014

