

## 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/>

### 16 October, 2014 PACIFIC SEAS STATE

During September through early 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 above average sea surface temperature was observed towards the south-west coast.

### MJO STATE

MJO is weak and therefore it shall not have any influence on rainfall in Sri Lanka.

### Highlights

#### Monitoring and Predictions:

Very heavy rainfall was observed throughout the country and mostly around the south-west region during the previous week and very high rainfall shall continue in the entire country during next week as well. The south-west sea of Sri Lanka shows an above average sea surface temperature.

### Summary

#### Monitoring

**Weekly Monitoring:** Very high rainfall was observed in the entire country throughout the week with highest rainfall observed on 17<sup>th</sup> of October averaging around 100 mm while there was an average rainfall of 20 mm -40 mm during the remaining days. The south-west region in general has received an extremely high rainfall during the week.

**Monthly Monitoring:** An average rainfall of 6 mm-10 mm was observed throughout the country with higher precipitation observed in the south-western regions of Sri Lanka during September. Highest rainfall during this month was observed in Ratnapura district. Also the decadal rainfall average was increased from 8 mm to 18 mm within a week.

#### Predictions

**14 day prediction:** The entire country shall receive total rainfall more than 95 mm during 22<sup>nd</sup> October to 28<sup>th</sup> October. Rainfall is expected to increase throughout the country during 29<sup>th</sup> of October to 4<sup>th</sup> of November resulting in very high rainfall more than 135 mm in total.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model the entire country shall receive high rainfall around 7.6 mm on the 24<sup>th</sup> of October. By 25<sup>th</sup> of October the north-eastern region shall receive rainfall around 2.5 mm-7.6 mm. High rainfalls continue in the Indian Ocean as previous week. Heavy rainfall is expected during 22<sup>nd</sup> -27<sup>th</sup> October in the central region of the country.

**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

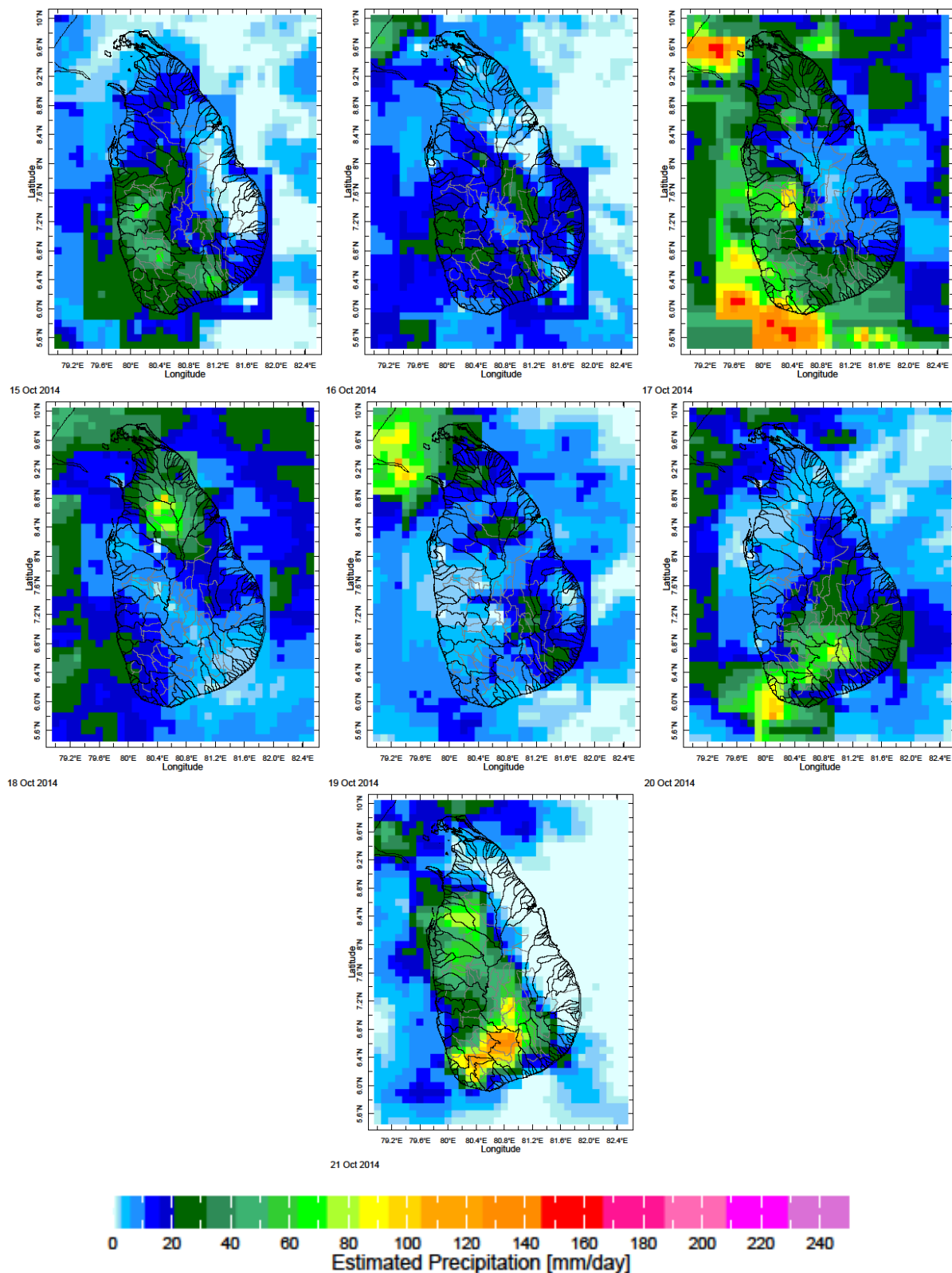
<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

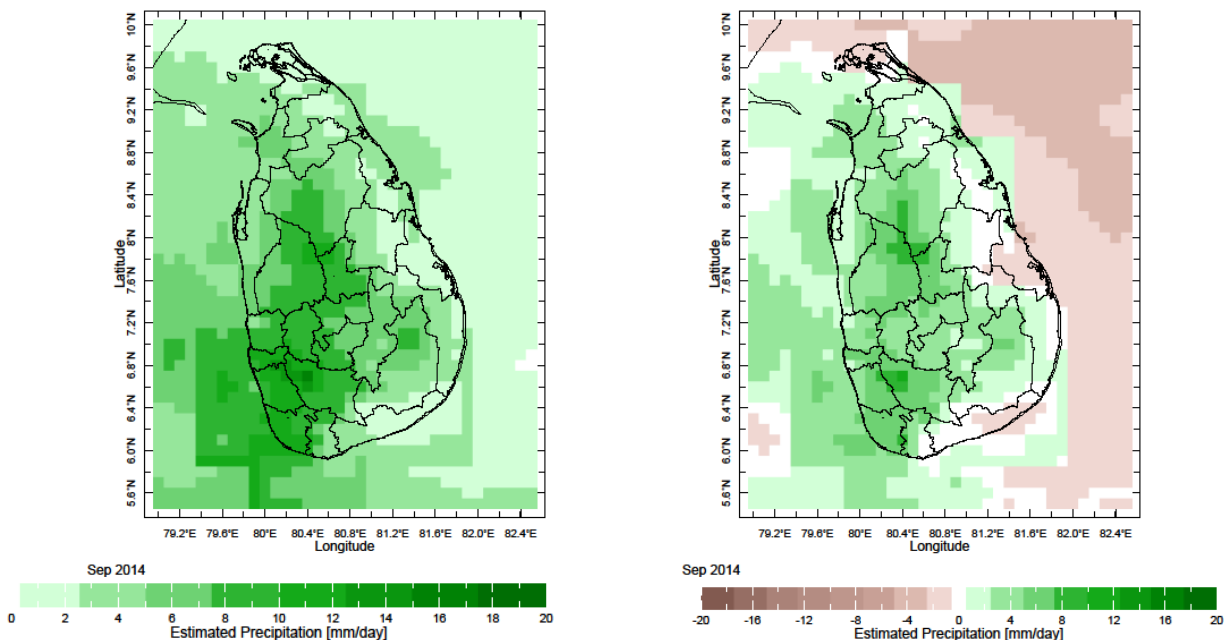
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

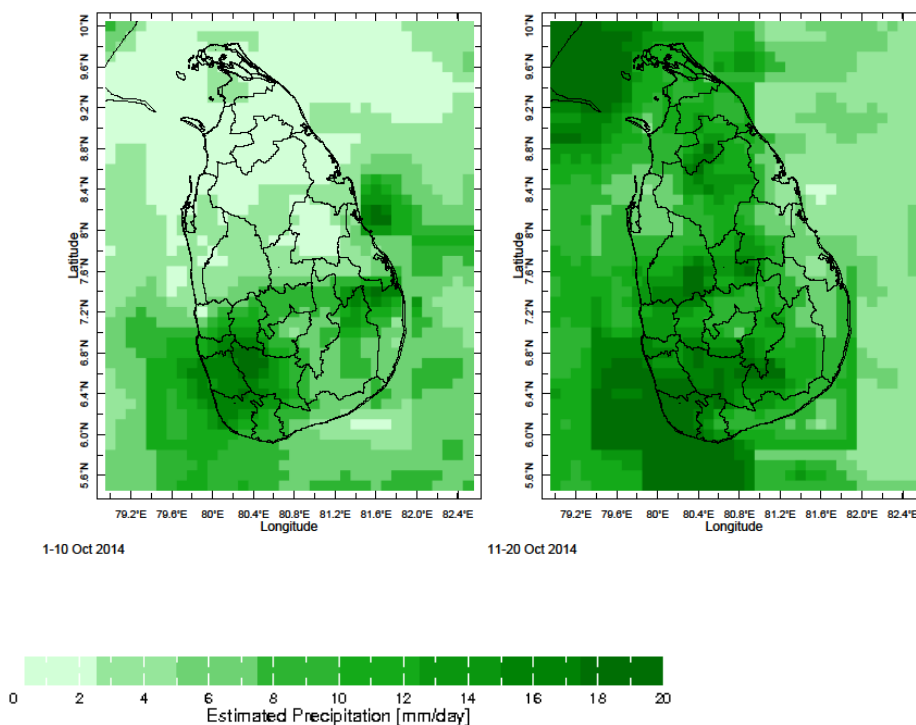
### a) Daily Satellite Derived Rainfall Estimate Maps: 15<sup>th</sup> – 21<sup>st</sup> October 2014 (Left-Right, Top-Bottom)



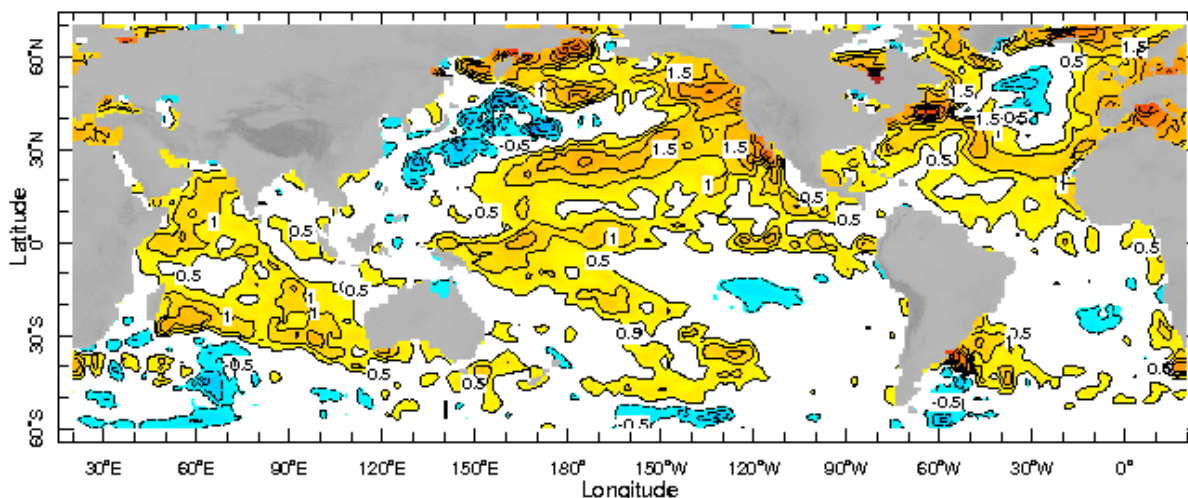
**b) Monthly Satellite Derived Rainfall Estimates for September 2014 (Average – Left and Anomaly - Right)**



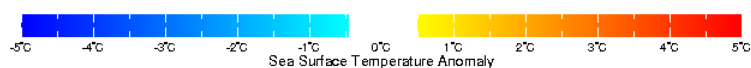
**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (1-10 Oct and 11-20 Oct, 2014)**



**d) Weekly Average SST Anomalies**



12-18 Oct 2014



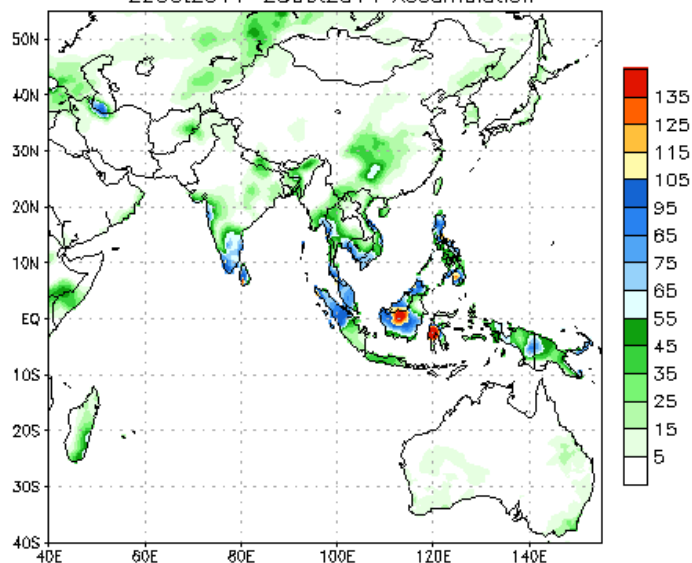
**Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 12<sup>th</sup> October – 18<sup>th</sup> October, 2014**

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

## 2. Predictions

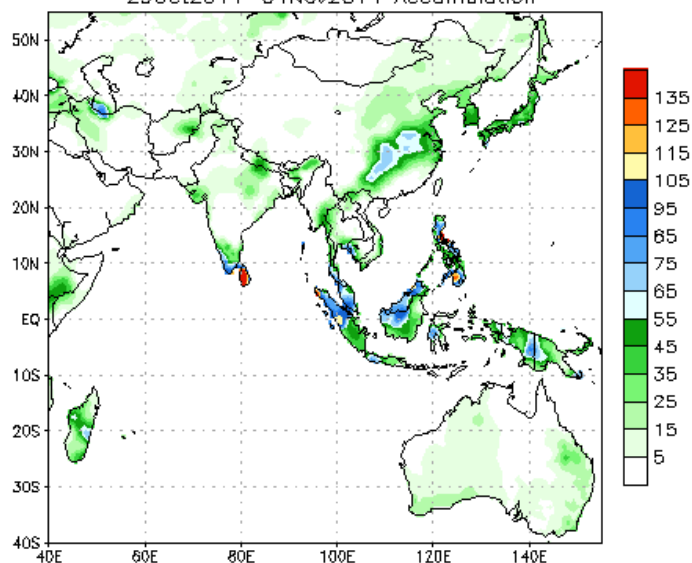
### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 22Oct2014  
22Oct2014-28Oct2014 Accumulation



Bias correction based on last 30-day forecast error

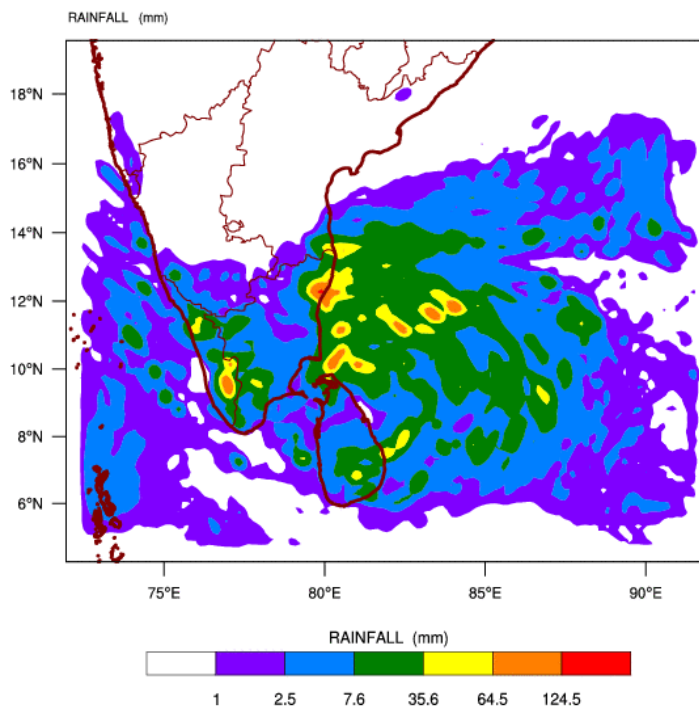
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 22Oct2014  
29Oct2014-04Nov2014 Accumulation



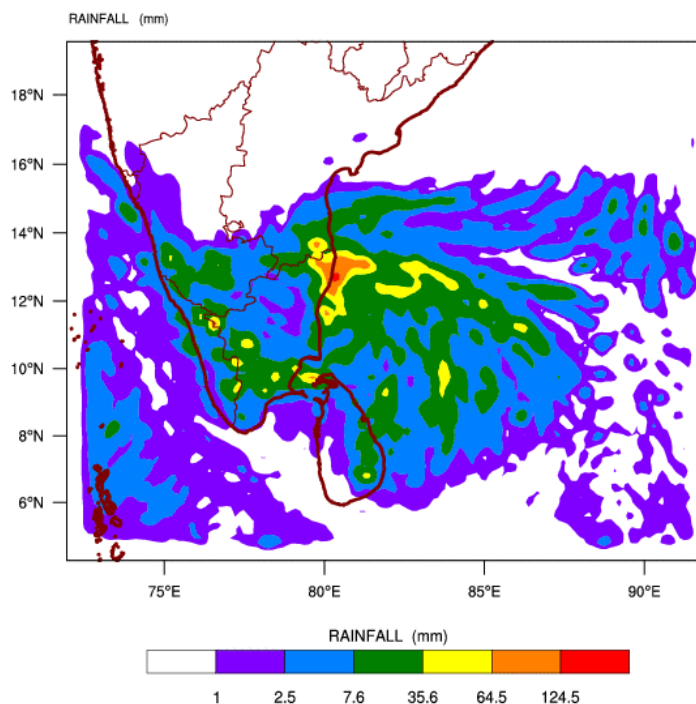
Bias correction based on last 30-day forecast error

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

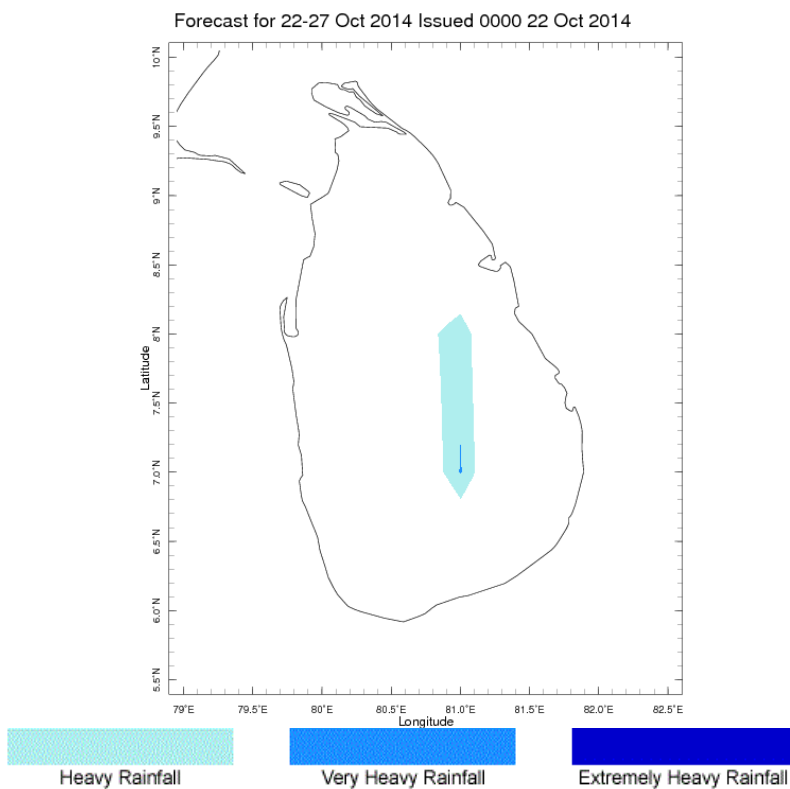
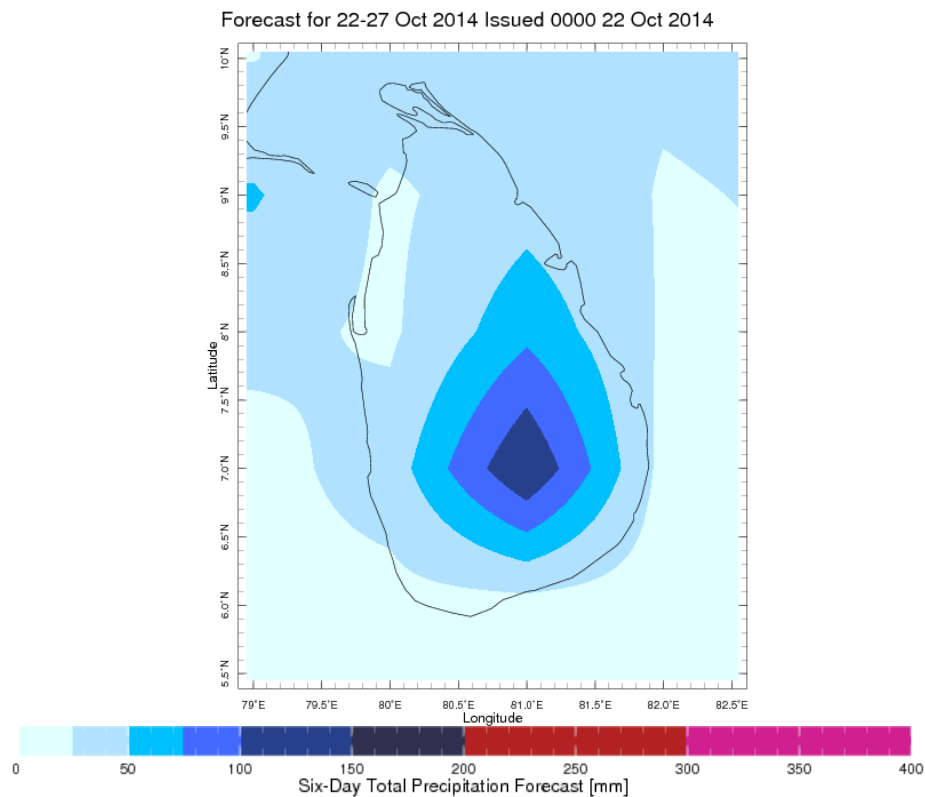
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 22-10-2014 valid for 03 UTC of 24-10-2014



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 22-10-2014 valid for 03 UTC of 25-10-2014



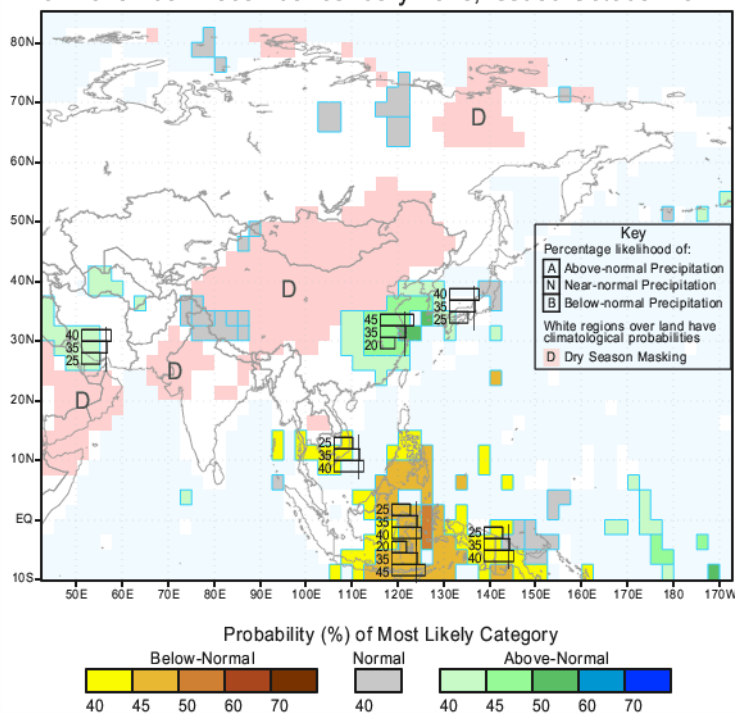
**c) Weekly Precipitation Forecast for 22<sup>nd</sup> - 27<sup>th</sup> October 2014 (Precipitation Forecast in Context Map Tool, IRI)**





## 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

