

## Experimental Climate Monitoring and Prediction

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**1<sup>st</sup> April, 2015**

### 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/>

### March 19, 2015 PACIFIC SEAS STATE

During February through mid-March 2015 the SST just met the thresholds for weak Niño conditions. The consensus of ENSO prediction models indicate weak El Niño conditions during the March-May 2015 season in progress, continuing and strengthening El Niño toward mid-2015.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

Neutral sea surface temperature was observed in the sea immediately around Sri Lanka but the Arabian Sea and South of the Equator is unusually warm. Rainfall is usually suppressed when these conditions occur.

### MJO STATE

MJO is in phase 2 and is of large enough amplitude so in the next few days shall enhance rainfall in Sri Lanka

### Highlights

- Both dry and wet conditions were observed during the past week (23<sup>rd</sup> March – 29<sup>th</sup> March).
- The IMD WRF model predicts 3-day rainfall throughout the country ranging between 1–60mm from 31<sup>st</sup> March – 13<sup>th</sup> April 2015.
- NCEP GFS model predicts dry conditions from 31<sup>st</sup> - 6<sup>th</sup> April; and precipitation between 15-25mm from 7<sup>th</sup> – 14<sup>th</sup> April.

### Summary

#### Monitoring

**Weekly Monitoring:** No rainfall was observed in any part of the country from 23<sup>rd</sup> to 25<sup>th</sup> March 2015. Some rainfall was observed through 26<sup>th</sup> to 29<sup>th</sup> March. On the 26<sup>th</sup> apart from the north-western, north-central, and parts of northern and eastern provinces the whole country received rainfall ranging between 5-40mm, with south-western & north-eastern parts of the country receiving 25–35mm. On the 27<sup>th</sup> fairly scattered rainfall was received throughout the country with Northern part of the country receiving rainfall between 5–25mm. On the 28<sup>th</sup> parts of Uva, Sabaragamuwa and Southern provinces had received 25-75mm of rainfall while other parts of the country received rainfall varying from 5-25mm. On the 29<sup>th</sup> scattered rainfall was observed throughout the country ranging between 5-25mm.

**Monthly Monitoring:** Most of the country received above average rainfall during February. Less than average rainfall was observed only in Puttalam, Kurunegala, and Polonnaruwa districts. Batticaloa and Ratnapura areas received the highest rainfall during this month. In March until the 10<sup>th</sup>, rainfall was mostly observed in the Western, South-western and North-western regions of the country. During the next 10 days rainfall was observed throughout the country with higher rainfall in the Western regions.

#### Predictions

**14 day prediction:** NOAA NCEP models predict rainfall for up to 15 mm from 31<sup>st</sup> March-6 April 2015. Thereafter 45mm of rainfall is expected from 7<sup>th</sup> - 13<sup>th</sup> April 2015.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model, on the 2<sup>nd</sup> of April rainfall is expected throughout the country, with rainfall increasing between 35-60mm in the central, Sabaragamuwa, Western, and part of North-western regions. Rainfall is expected to shift towards Central, North-central, Uva, and Eastern regions on the 3<sup>rd</sup> and shall receive between 35-50mm rainfall, and the rest of the country shall also receive slight rainfall. From 31<sup>st</sup> March – 5<sup>th</sup> April 2015, NOAA/CFS models predict more than 100mm of rainfall in Badulla district and rainfall ranging between 50-100mm in adjacent districts, with rainfall around 25-50mm towards Eastern, North-eastern, Western, and Southern areas. However extreme rainfall events are not predicted during this period.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for April to June, the total 3 month precipitation shall be climatological. The 3 month average temperature has more than 60- 70% likelihood of being in the above-normal tercile during this period.

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

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

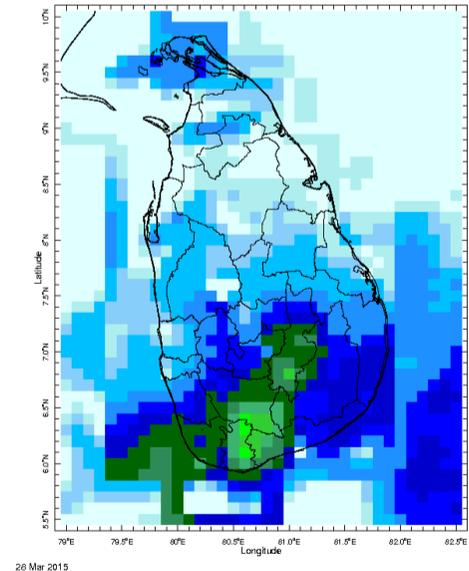
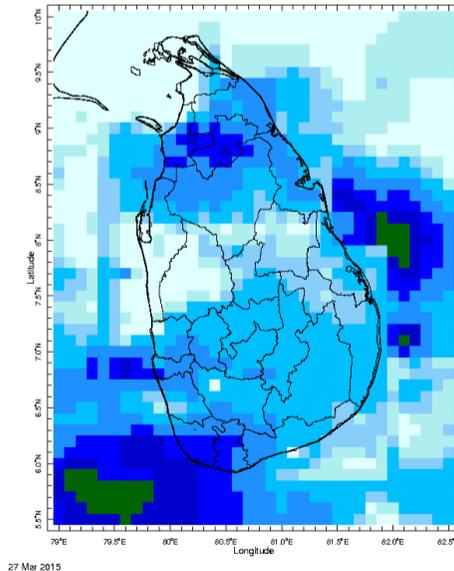
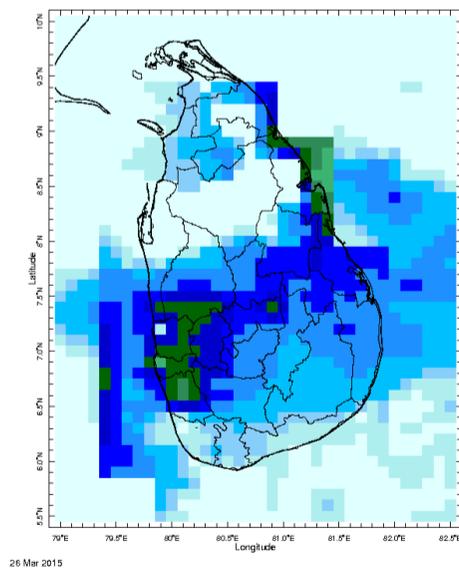
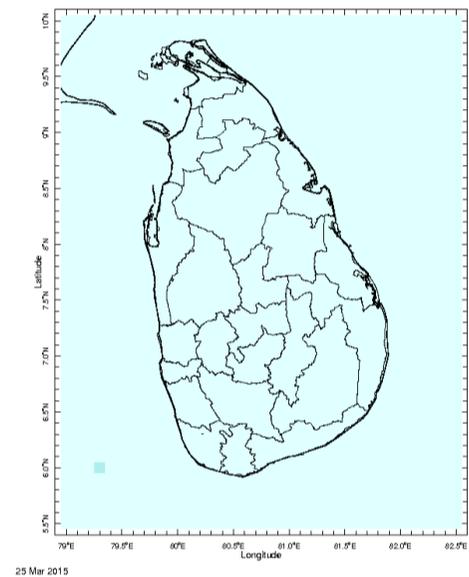
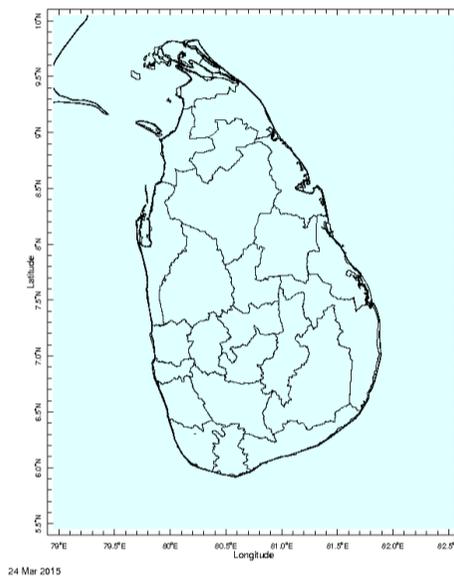
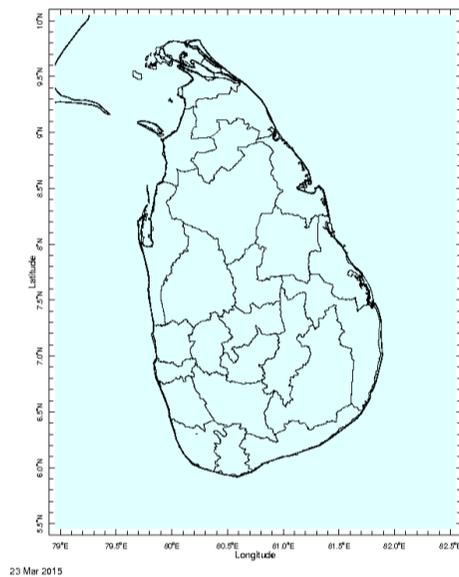
**Weekly Hydro- Meteorological Report for Sri Lanka**

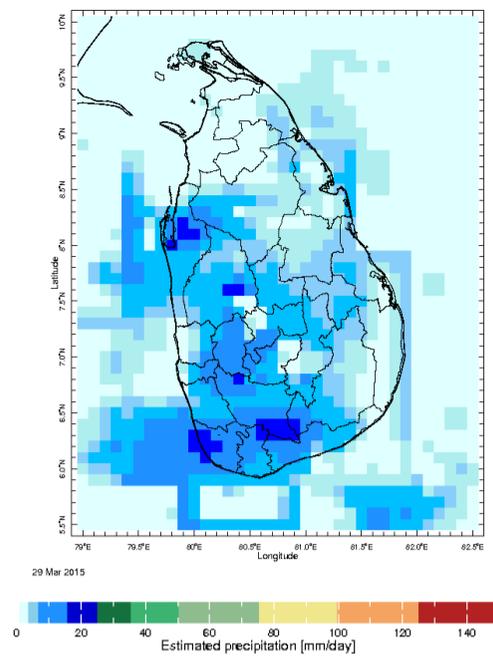
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**Daily Rainfall Monitoring**

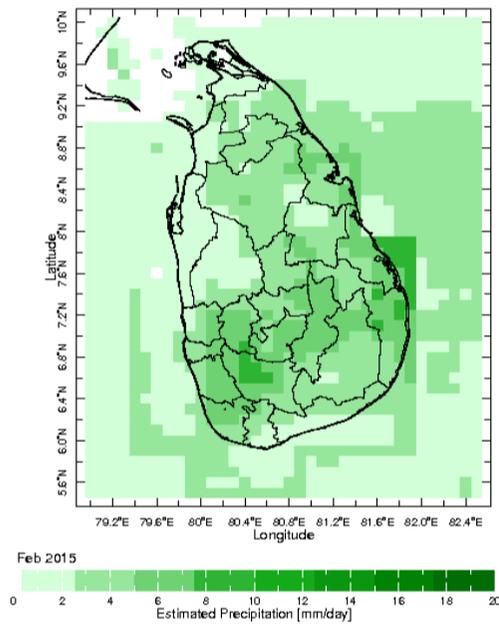
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



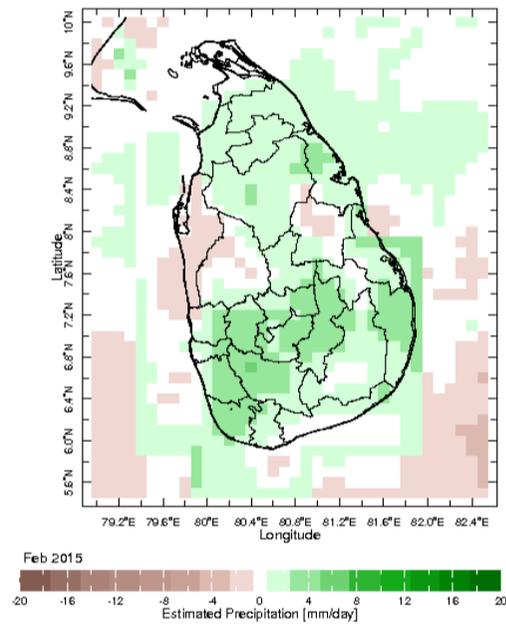


## Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall

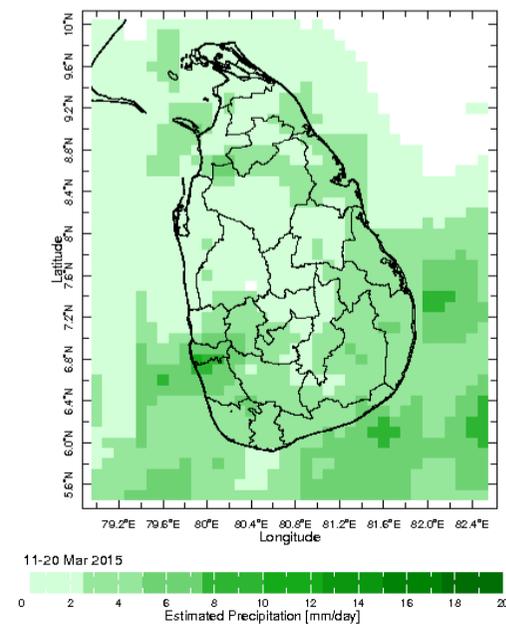
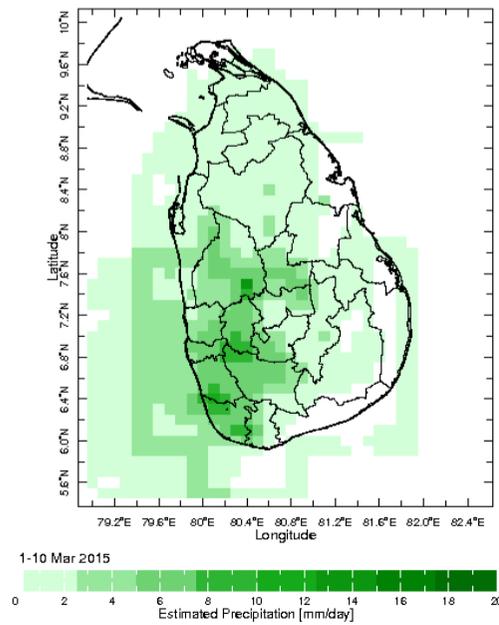


Monthly Average

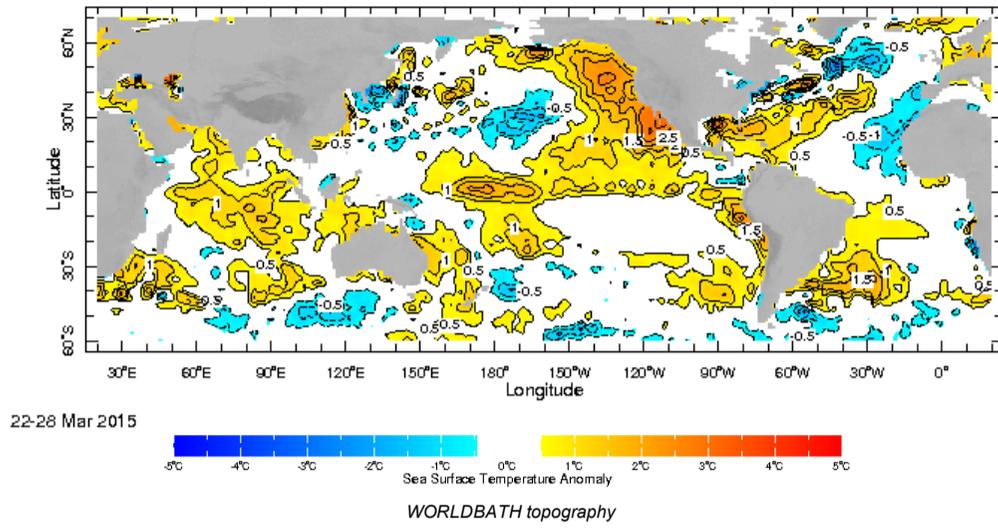


Monthly Anomaly

## Dekadal (10 Day) Satellite Derived Rainfall Estimates

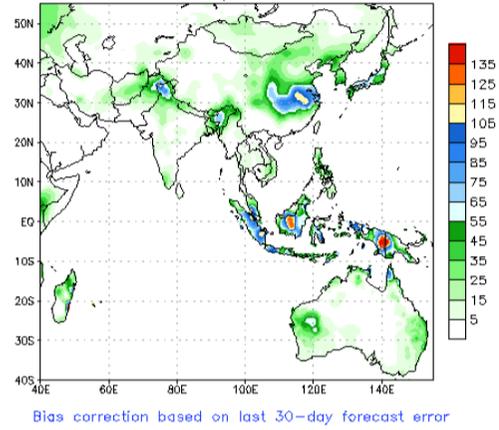


**Weekly Average SST Anomalies**

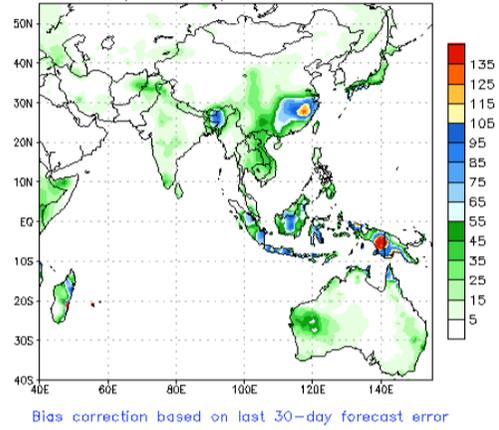


**NCEP GFS 1- 14 Day prediction**

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 31Mar2015  
31Mar2015-06Apr2015 Accumulation

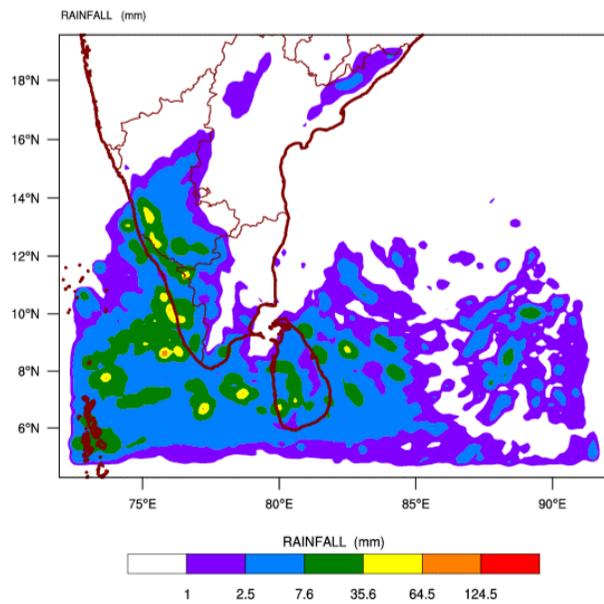


NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 31Mar2015  
07Apr2015-13Apr2015 Accumulation

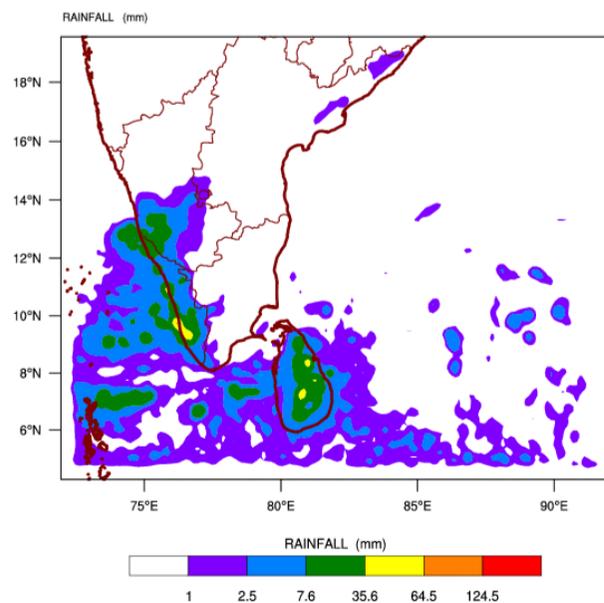


**WRF Model Forecast (from IMD Chennai)**

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 31-03-2015 valid for 03 UTC of 02-04-2015



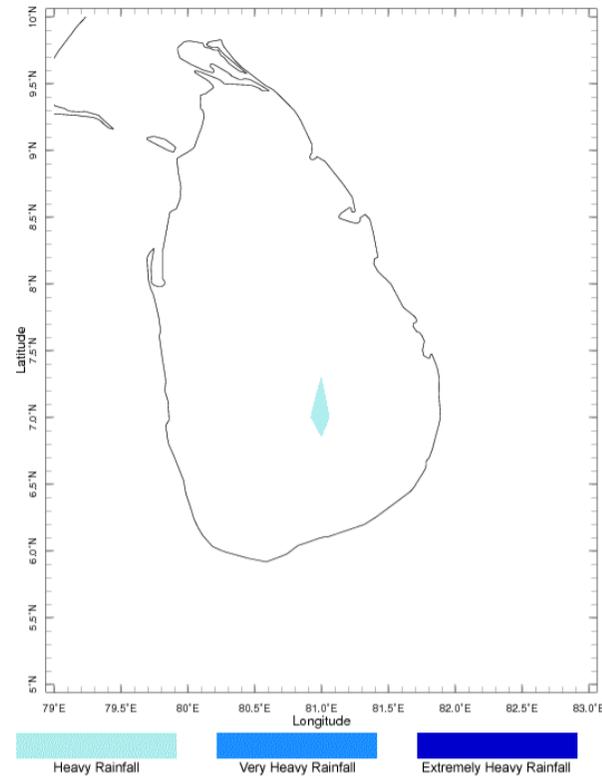
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 31-03-2015 valid for 03 UTC of 03-04-2015



## Weekly Rainfall Forecast

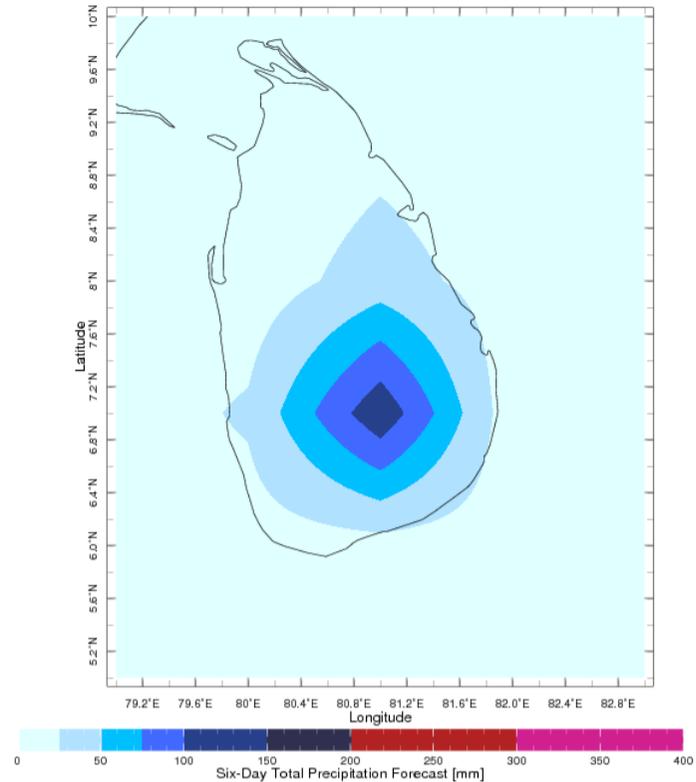
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 31 Mar 2015 - 5 Apr 2015 Issued 0000 31 Mar 2015



Extreme Rainfall Forecast

Forecast for 31 Mar 2015 - 5 Apr 2015 Issued 0000 31 Mar 2015

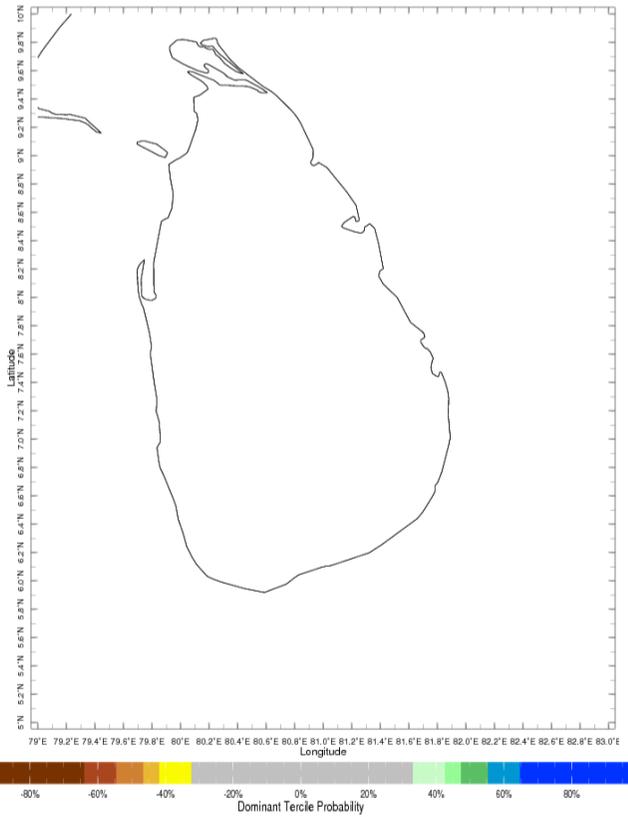


Total Six Day Precipitation Forecast

## Seasonal Rainfall and Temperature Forecast

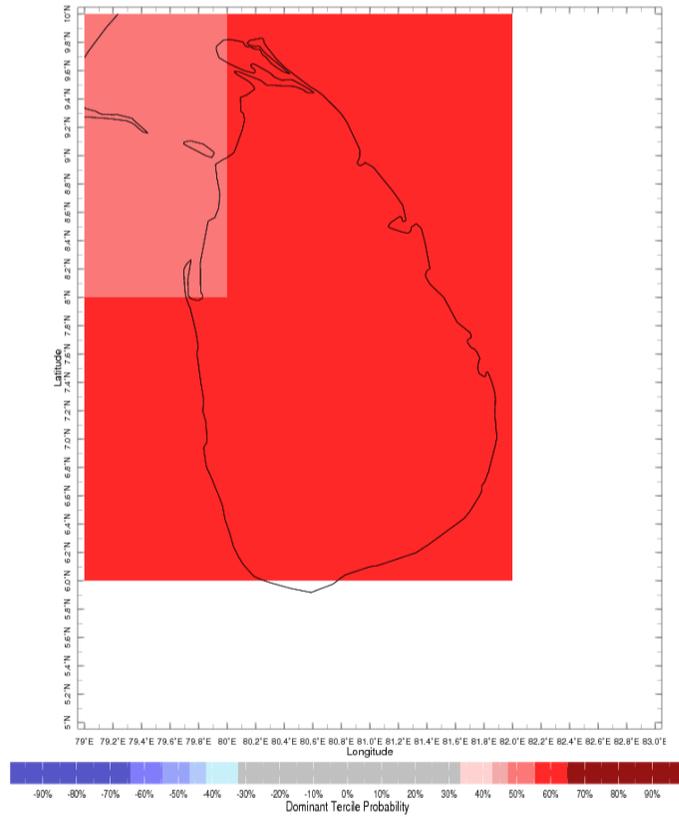
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).

Apr-Jun 2015 IRI Seasonal Precipitation Forecast issued Mar 2015



Precipitation Forecast

Apr-Jun 2015 IRI Seasonal Temperature Forecast issued Mar 2015



Temperature Forecast

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