

Experimental Climate Monitoring and Prediction

by: Udara Rathnayake, Akram Kamiss, Prabodha Agalawatte, Sewwandhi Chandrasekara, Zeenas Yahiya,
Lareef Zubair and Michael Bell (FECT and IRI¹)

24 March 2016

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March 17, 2016 PACIFIC SEAS STATE

During mid-March 2016 the tropical Pacific SST was weakening, but still at a strong El Niño level. All atmospheric variables continue to support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific, extending eastward. Most ENSO prediction models indicate continued weakening El Niño conditions over the coming several months, returning to neutral by late spring or early summer 2016, and a chance for La Niña development by fall.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1°C above average sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO phase is in 5 therefore shall not have a significant impact on the rainfall in Sri Lanka.

Highlights

Dry weather conditions continued in the entire country during the week 16th – 22nd March where only central region of the country received rainfall on 16th March. Highest rainfall of 60 mm was observed around Aranayake while southern region of Kandy and north western region of Nuwara Eliya received rainfall up to 40 mm on this day. NOAA NCEP model predict slight amounts of rainfall in western, central, eastern and southern regions of the country during next week and the dry weather conditions are expected to be continued. MJO is in phase 5 and shall not have a significant impact on the rainfall in Sri Lanka.

Summary

Monitoring

Weekly Monitoring: Rainfall received only in central region of the country during 16th – 22nd March while dry weather conditions were observed mostly in other districts. On 16th March, rainfall up to 60 mm was observed around Aranayake whereas southern region of Kandy and north western region of Nuwara Eliya received rainfall up to 40 mm. No rainfall was observed during 17th – 20th in the entire country while a drizzle condition received on 21st March in central and western provinces. No rainfall was observed in the entire country on 22nd March.

Monthly Monitoring: During February 2016 most regions of the country observed below average rainfall; and above average rainfall was observed in the northern region of Ratnapura, western region of Gampaha, Colombo, Kalutara, Galle, north region of Matara and the sea around western, south eastern and south western regions of the country.

Predictions

14 day prediction: NOAA NCEP models predict up to 25 mm rainfall around western, central, eastern and southern regions of the country during 23rd – 29th March and no rainfall is expected in the entire country during 30th March - 5th April.

IMD WRF & IRI Model Forecast: IMD WRF model forecast for 25th and 26th of March is not available due to technical problem. IRI CFS models predict up to 75 mm total precipitation in eastern sea and up to 50 mm total precipitation around eastern coastal region, Badulla, Kandy and Nuwara Eliya during 23rd – 28th March.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for April to June, the total 3 month precipitation shall be climatological. The 3 month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- Seasonal Predictions from IRI

¹ 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.

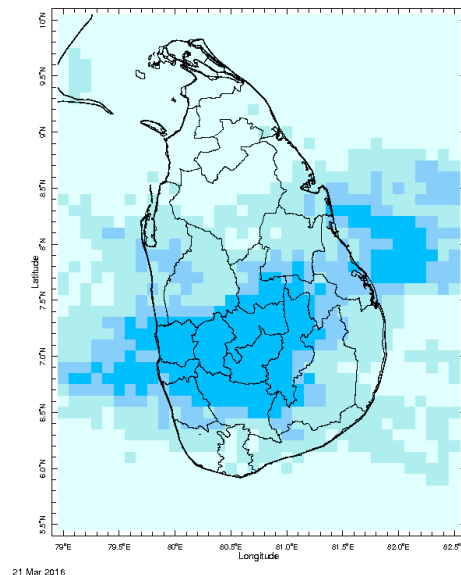
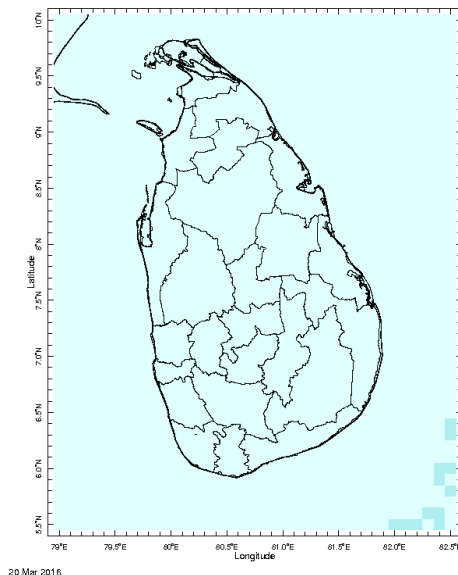
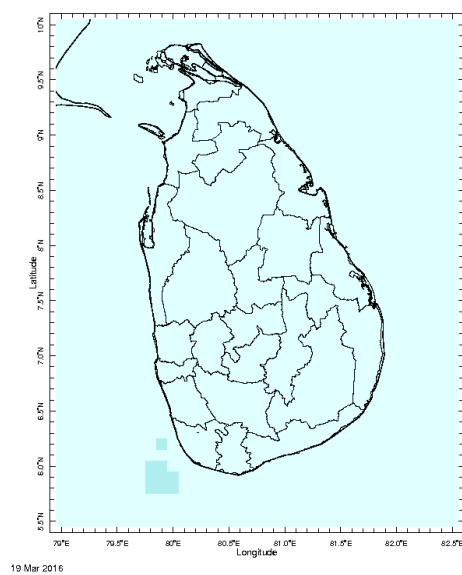
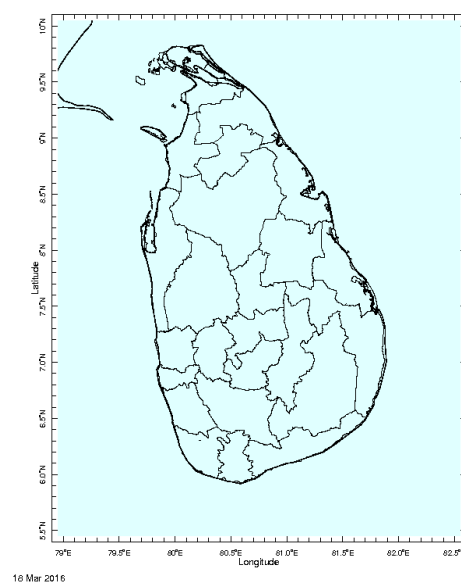
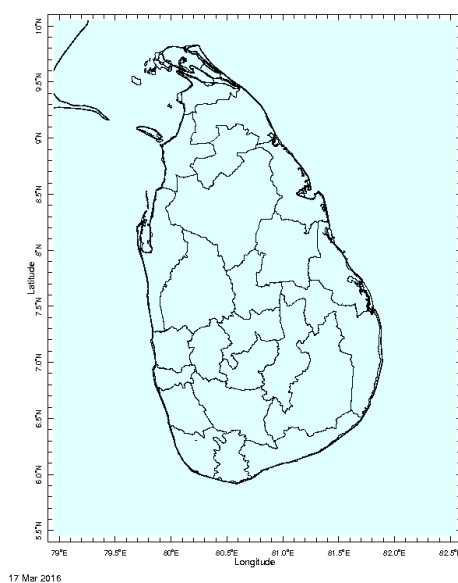
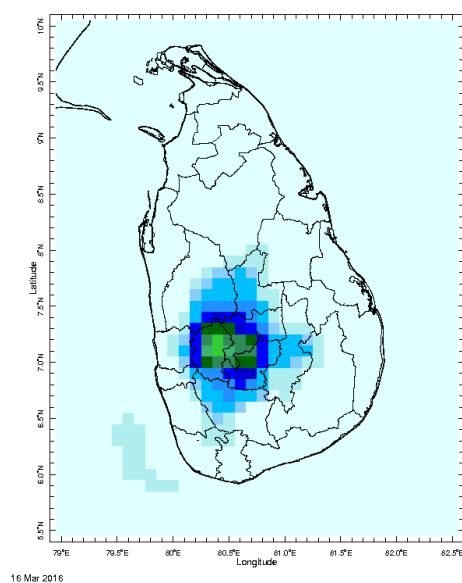
Weekly Hydro- Meteorological Report for Sri Lanka

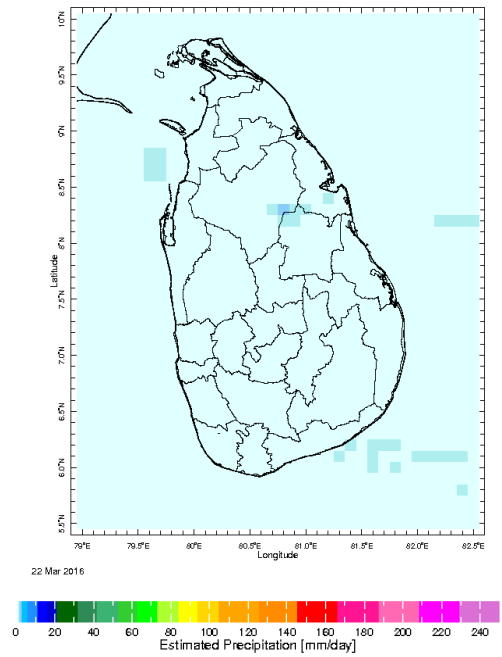
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Daily Rainfall Monitoring

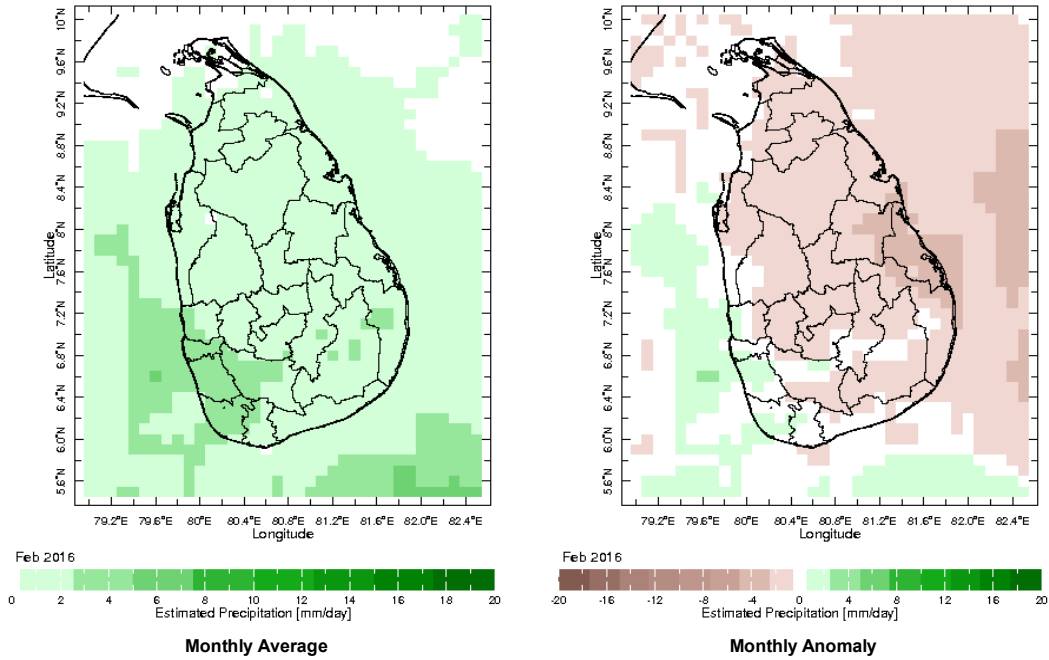
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



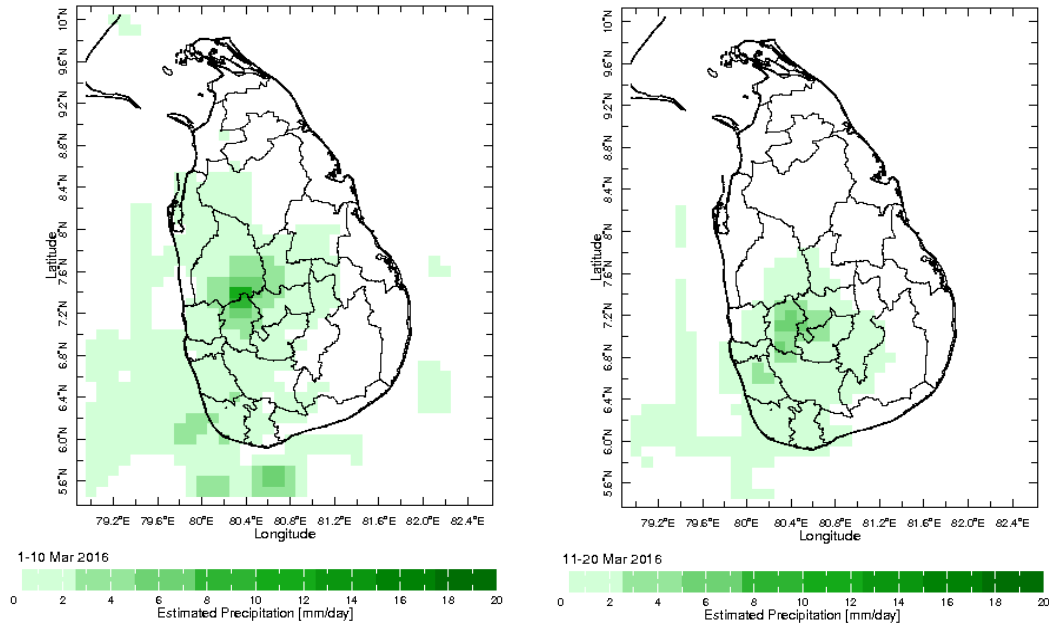


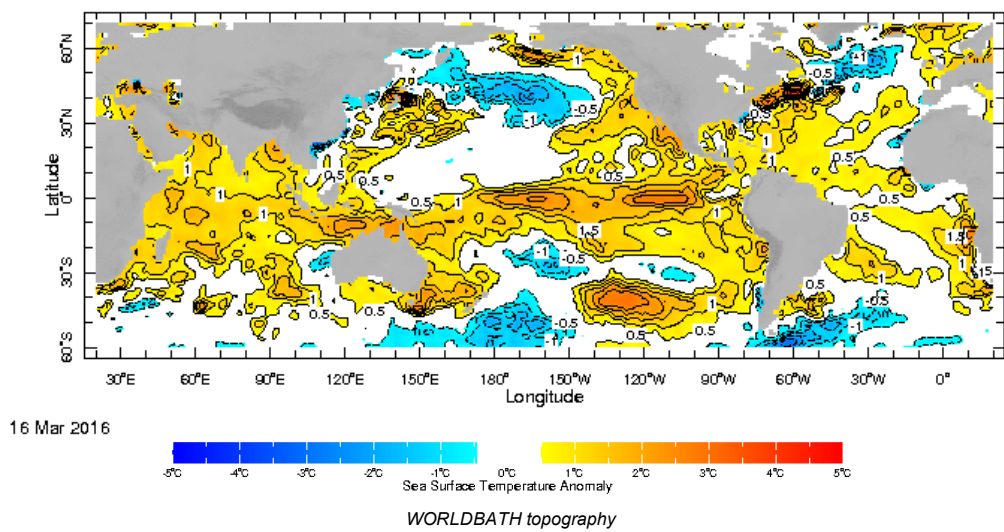
Monthly Rainfall Monitoring

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



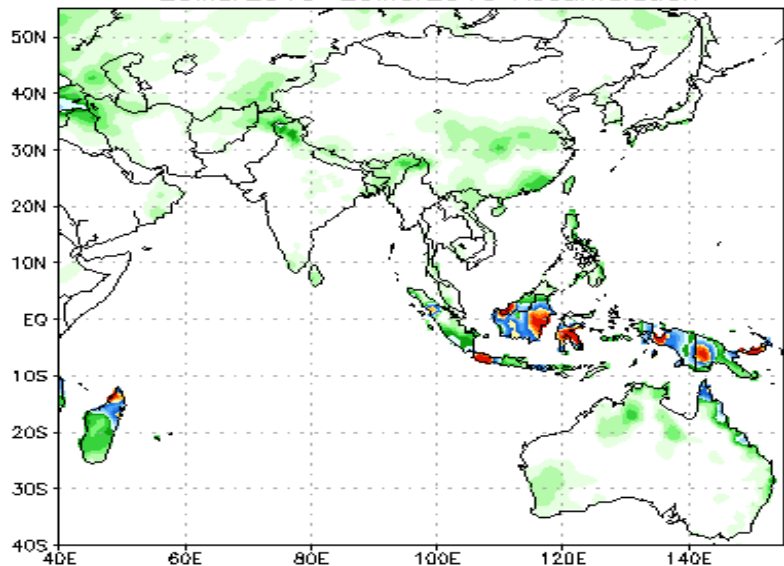
Dekadal (10 Day) Satellite Derived Rainfall Estimates





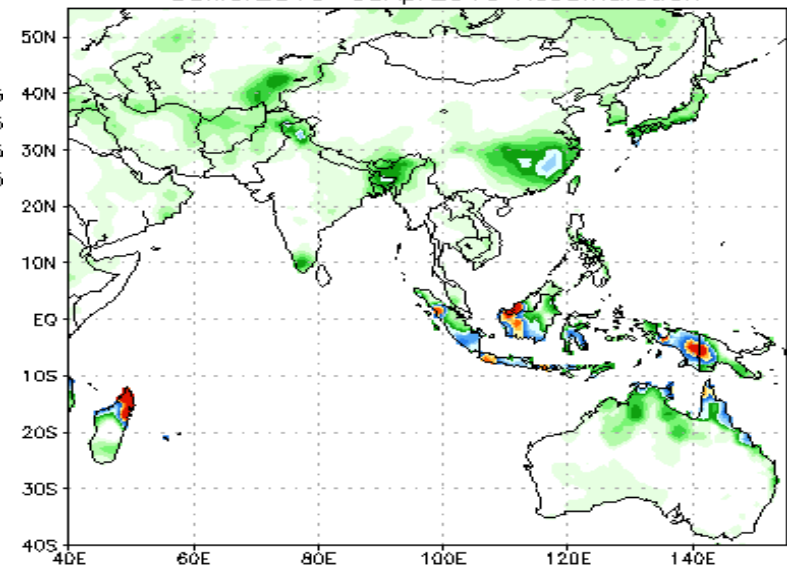
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 23Mar2016
23Mar2016–29Mar2016 Accumulation



Bias correction based on last 30–day forecast error

NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 23Mar2016
30Mar2016–05Apr2016 Accumulation



Bias correction based on last 30–day forecast error

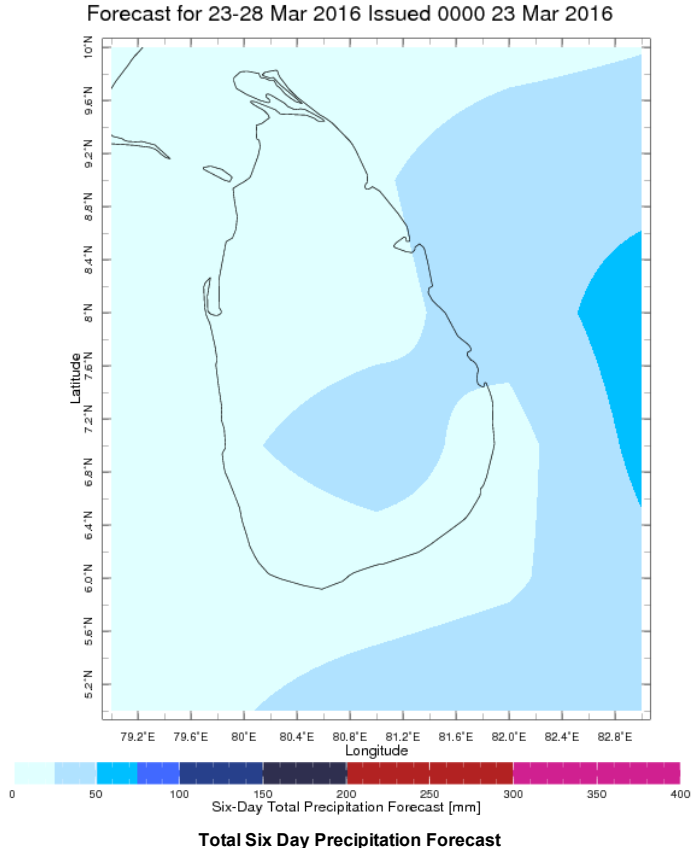
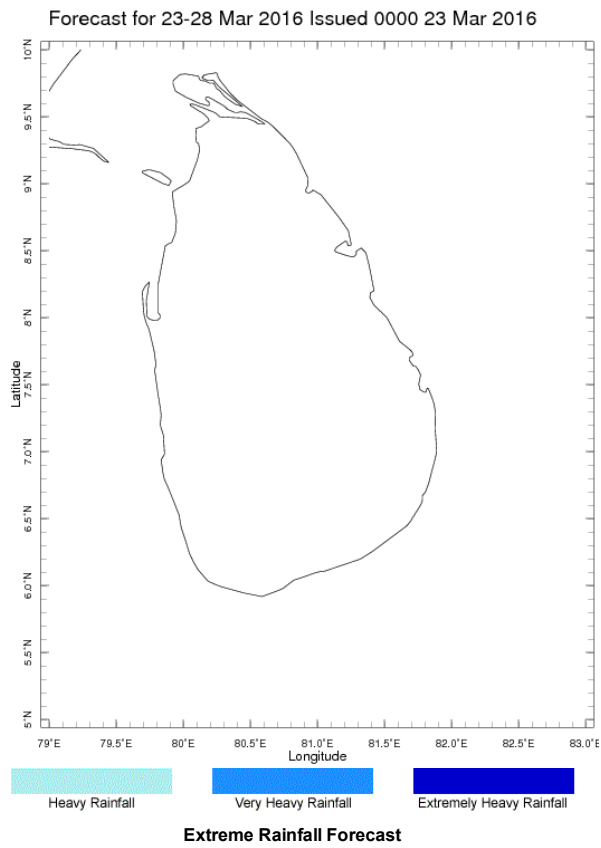
WRF Model Forecast (from IMD Chennai)

No Model output due to technical problem

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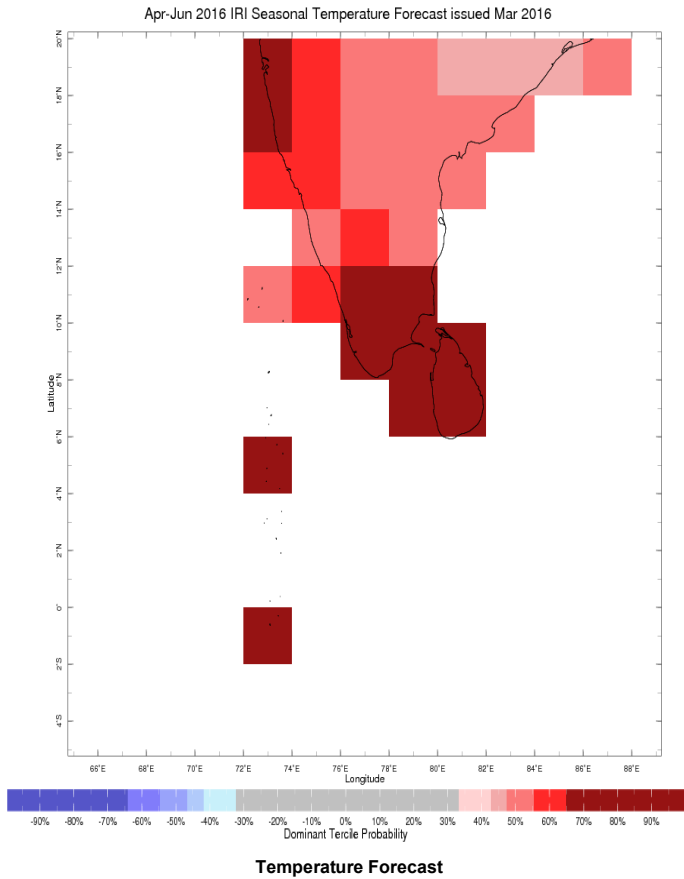
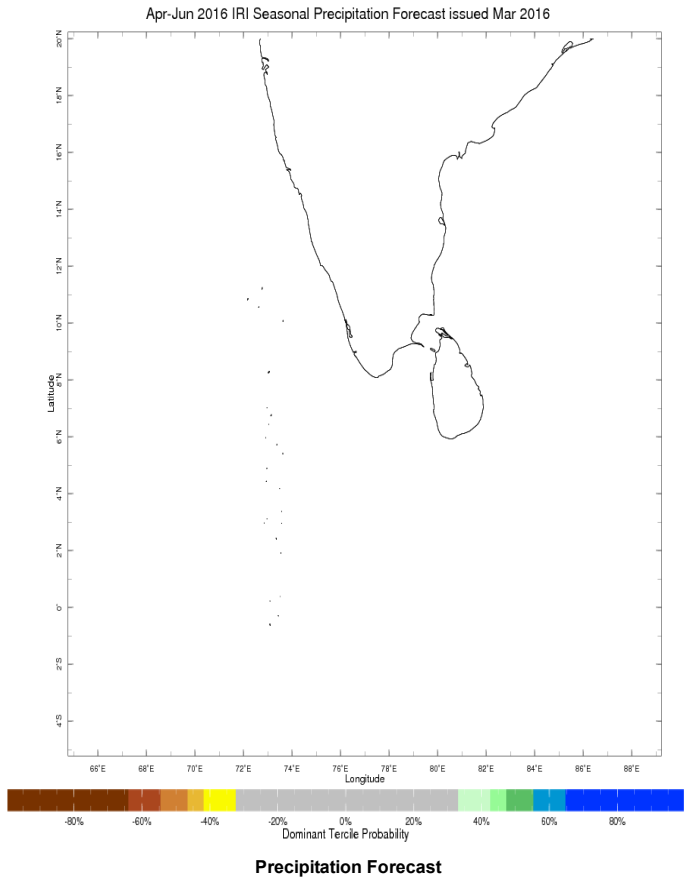
Weekly Rainfall Forecast

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.



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%).



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