

## Experimental Climate Monitoring and Prediction for the Maldives – March 2016

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University

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March 28, 2016

### PACIFIC SEAS STATE

March 17, 2016

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

March 16, 2016

1°C<sup>0</sup> Warmer than usual Sea surface temperature was observed around Maldives as is typical for an El Niño.

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### Highlights

The southern islands were quite wet during February and first 3 weeks of March. Northern islands did not receive any rainfall during this period while central islands received moderate rainfall. The seven-day forecasts suggest that there shall be no rainfall in the next few days in any island. There is an El Niño that is ongoing which may last at least a few more months. The most direct impact is the warmer seasonal temperatures.

### Summary

#### CLIMATOLOGY

**Monthly Climatology:** In January the rainfall in Southern islands of the Maldives usually ranges from 150- 200 mm while in central and southern islands it is 100- 150 mm and 50- 100 mm respectively. Thereafter in February rainfall usually decreases to 100- 150 mm in southern islands, 50- 100 mm in central islands and less than 50 in northern islands. In March, normally, similar a rainfall pattern continues in central and southern islands while rainfall in the northern islands increases to 50- 100 mm. During January to March strong south-westerly wind is usual in the entire country.

#### MONITORING

**Weekly Rainfall Monitoring:** During 12<sup>th</sup> March, it rained up to 40 mm in the southern-most islands. Thereafter until the 26<sup>th</sup>, dry conditions were seen throughout the country. During this period the sea towards south, south east and south west of Maldives received high rainfall ranging from 40 to 140 mm/day.

**Monthly and Seasonal Rainfall Monitoring:** In February 2016, the Maldives islands received average to above average rainfall. The south eastern sea received above average rainfall up to 12 mm/day. In northern islands dry conditions persist. Since December 2015, these islands received only slight amounts of rainfall but the deficit of rainfall is only about 100 mm from the average of past 12 years. Central islands received average rainfall during February but did not receive significant rainfall during the first 3 weeks of March. Despite this low rainfall, these islands have received more than expected cumulative rainfall in the past 12 months. Southern islands received significant rainfall in both February and March. These islands have received about 15% more rainfall than what is expected in the past 12 month.

#### PREDICTIONS

**Weekly Rainfall Forecast:** According to NOAA CFS models, rainfall is not expected in any atoll of the Maldives during 27<sup>th</sup> March – 1<sup>st</sup> April 2016.

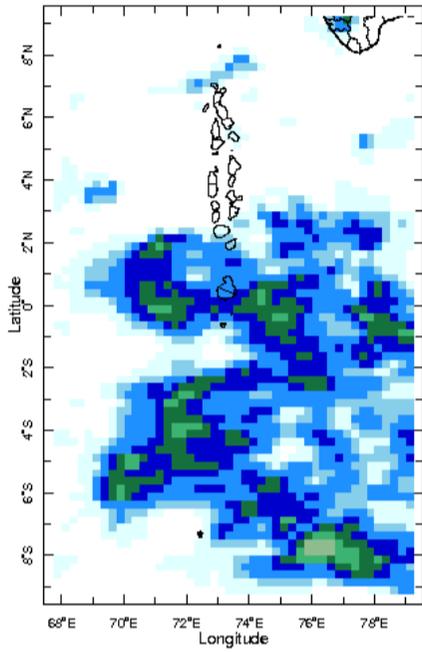
**Seasonal Rainfall and Temperature Prediction:** As per IRI Multi Model Probability Forecast for April to Jun 2016, the rainfall shall be climatological in the entire country. The 3-month average temperature has a 70- 80% likelihood to be in the above-normal tercile during these 3 months for the entire country.

### Inside this Issue

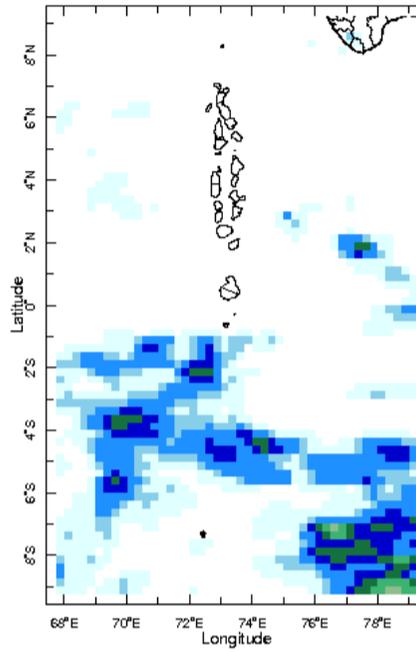
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## Daily Rainfall Monitoring

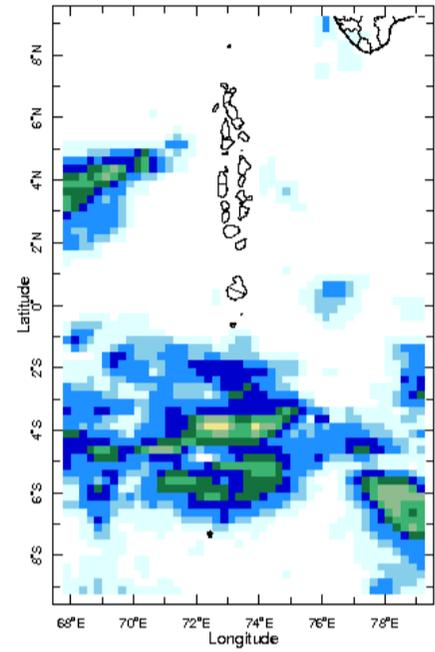
The following figures show the observed rainfall in the last 15 days in Maldives.



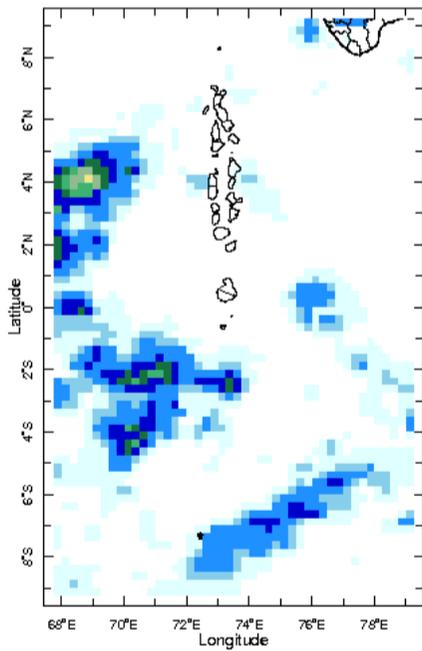
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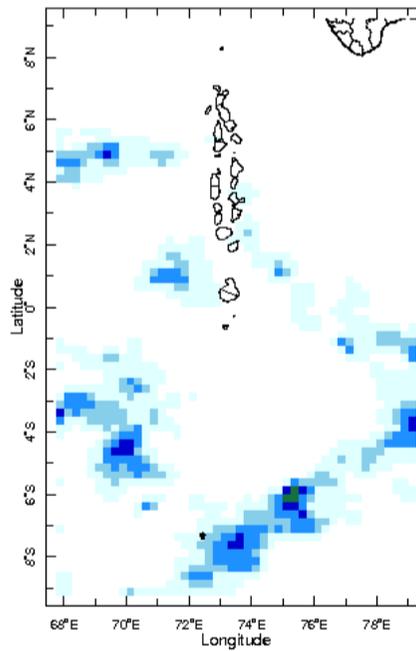
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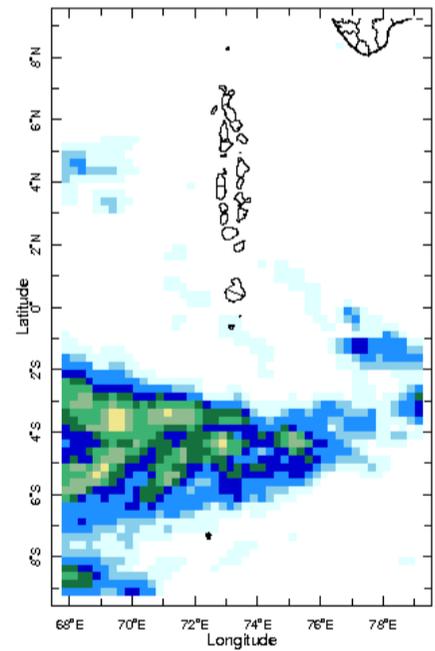
14 Mar 2016



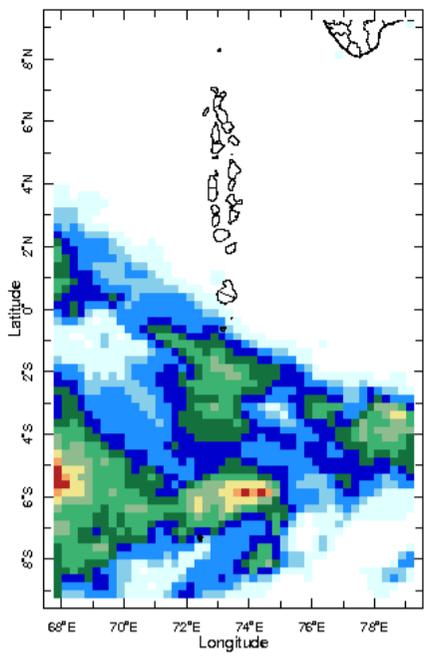
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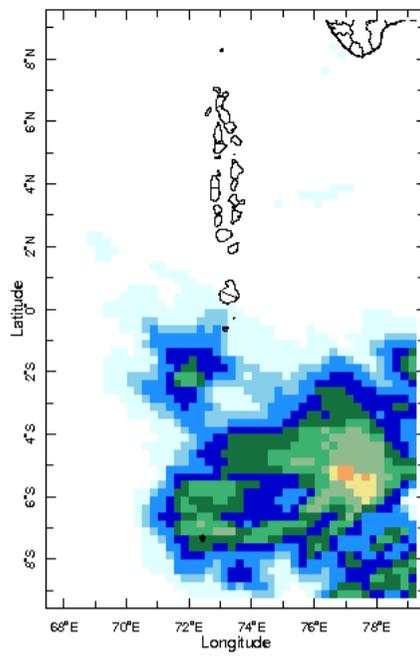
16 Mar 2016



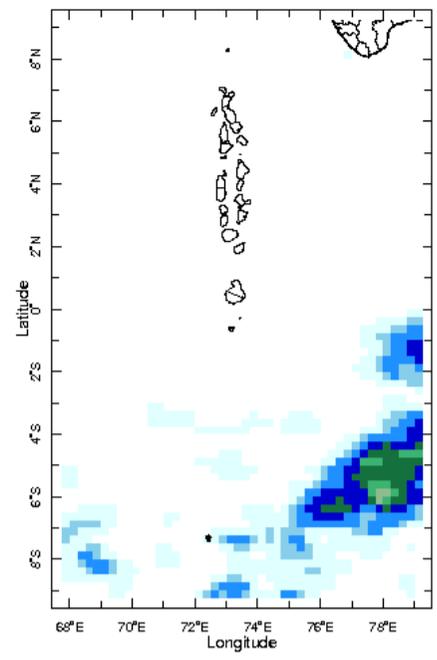
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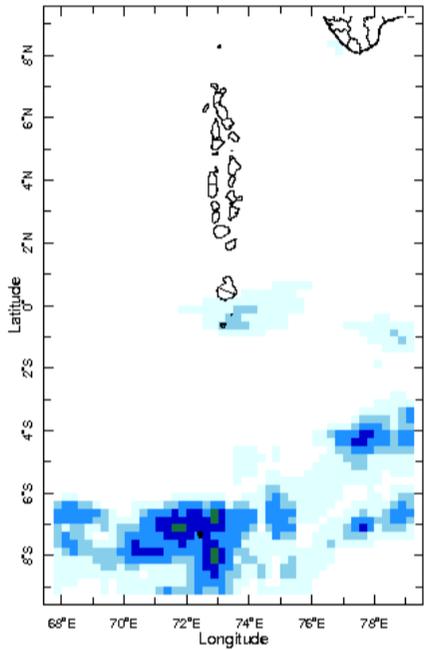
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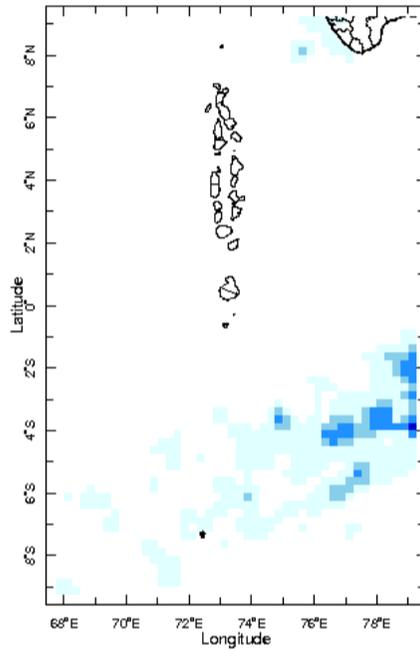
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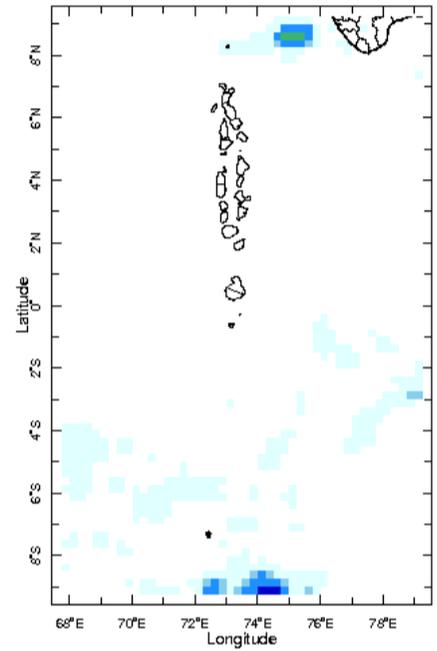
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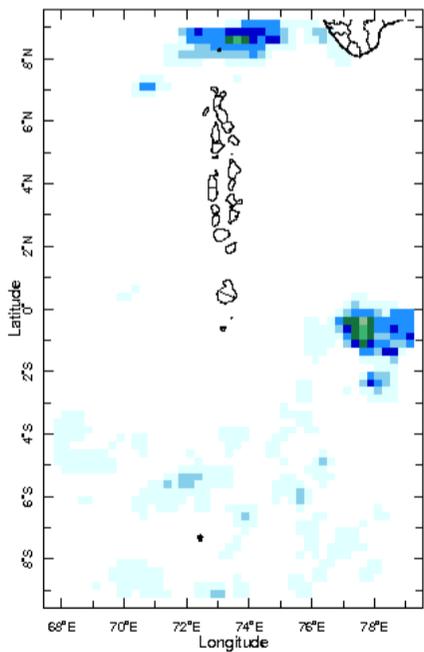
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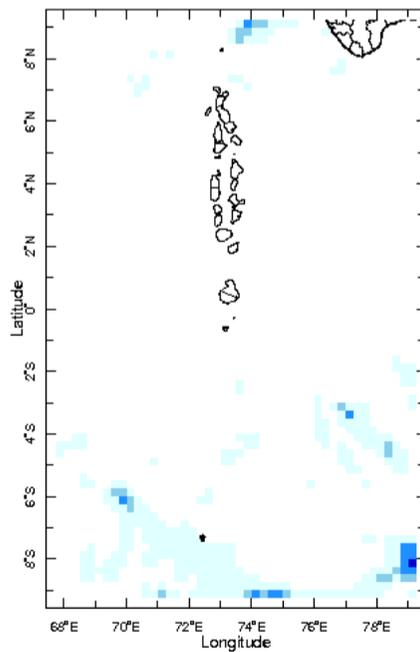
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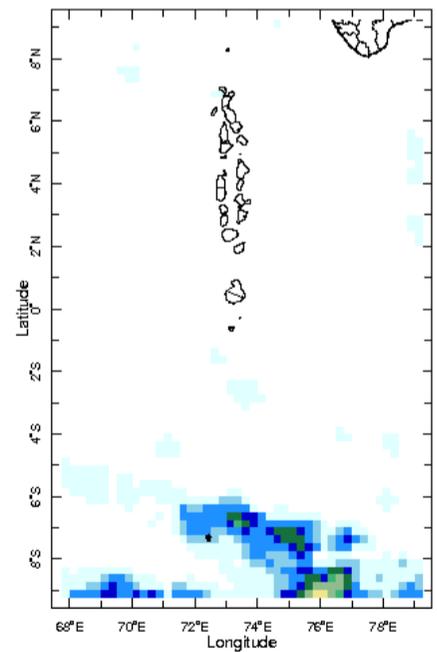
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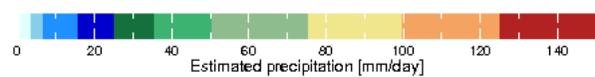
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25 Mar 2016

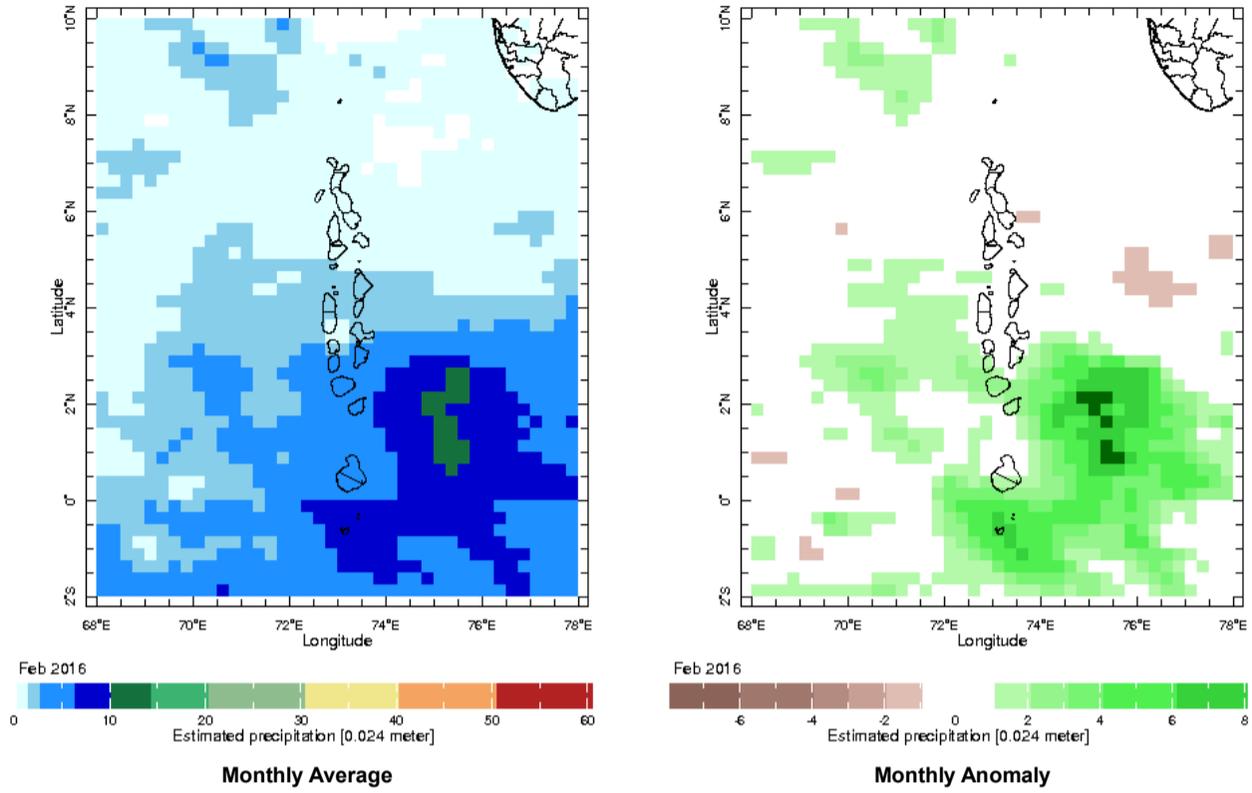


26 Mar 2016



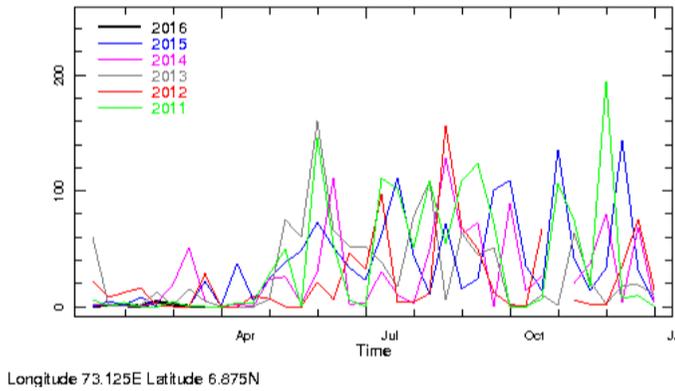
## Monthly Rainfall Monitoring

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

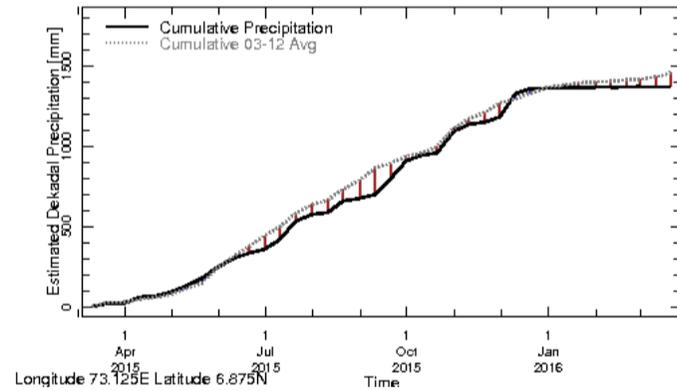


## Monthly and Seasonal Monitoring

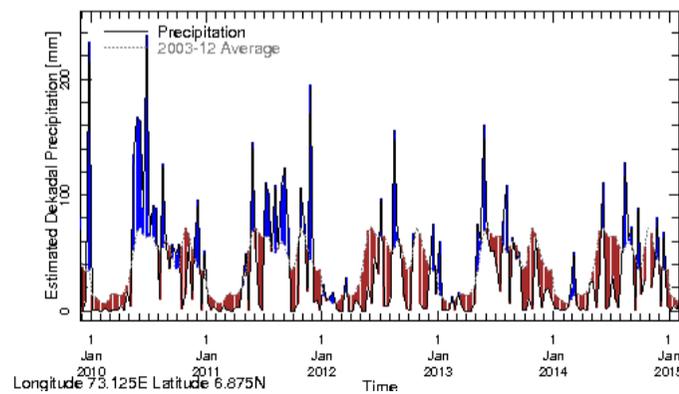
### Northern Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

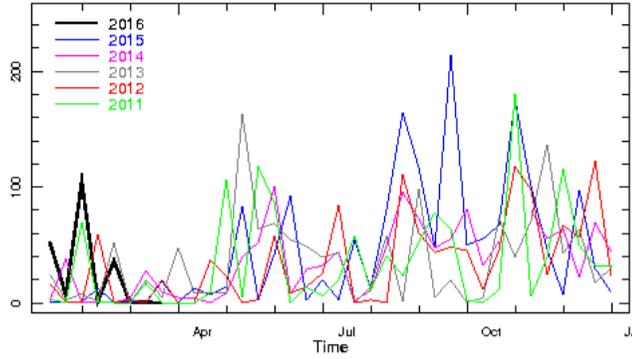


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.



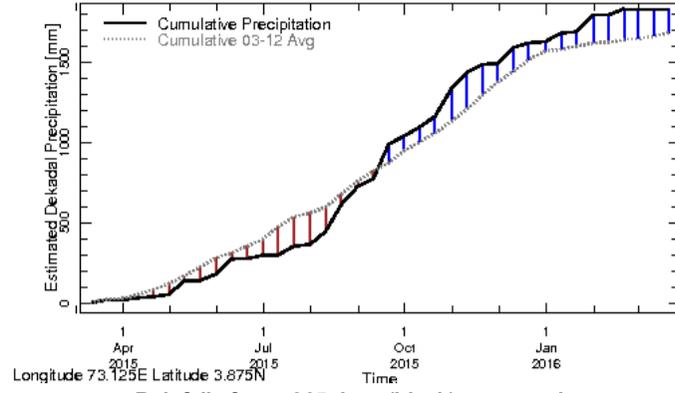
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

**Central Maldives:**



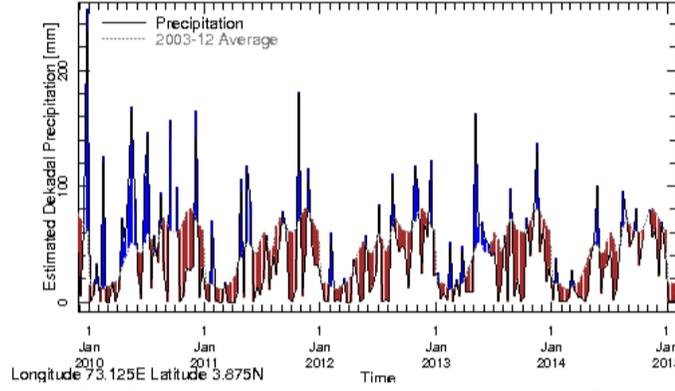
Longitude 73.125E Latitude 3.875N

**Rainfall in the current year (black) compared to rainfall in previous 5 years**



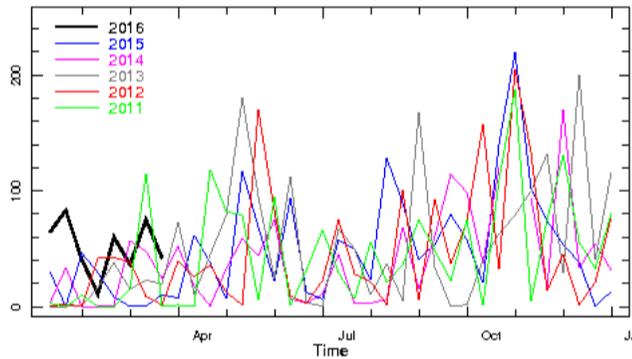
Longitude 73.125E Latitude 3.875N

**Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.**



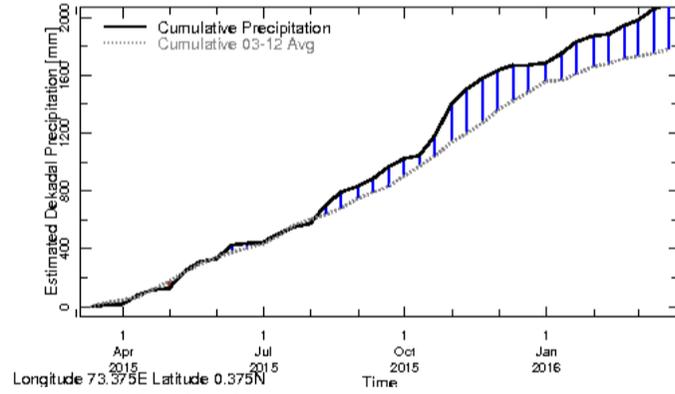
**Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown**

**Southern Maldives:**



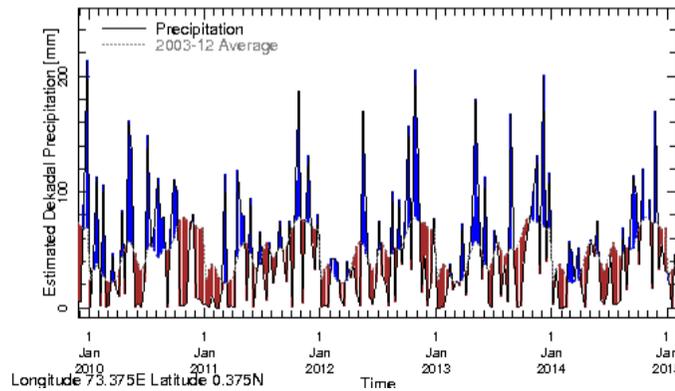
Longitude 73.375E Latitude 0.375N

**Rainfall in the current year (black) compared to rainfall in previous 5 years**



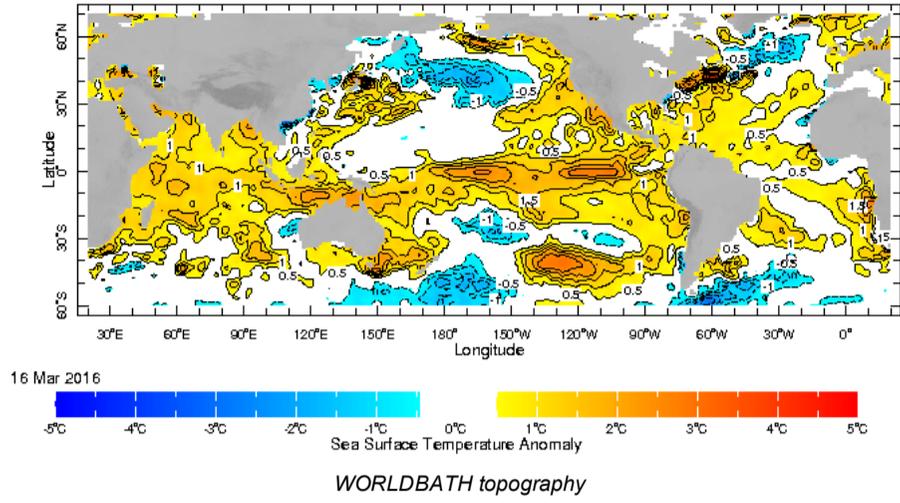
Longitude 73.375E Latitude 0.375N

**Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.**



**Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown**

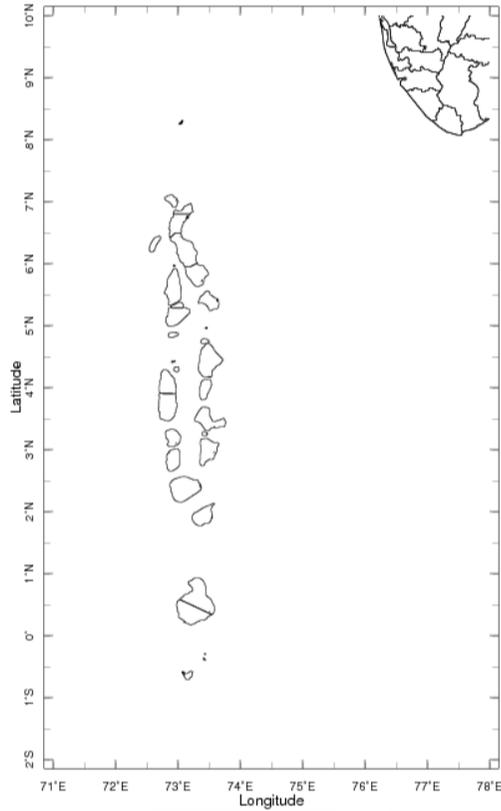
# Ocean Surface Monitoring



## Weekly Rainfall Forecast

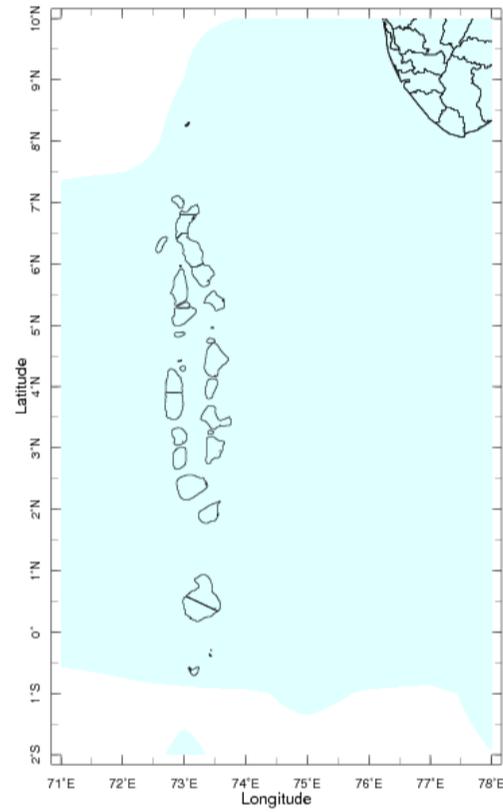
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 27 Mar 2016 - 1 Apr 2016 Issued 0000 27 Mar



Extreme Rainfall Forecast

Forecast for 27 Mar 2016 - 1 Apr 2016 Issued 0000 27 Mar

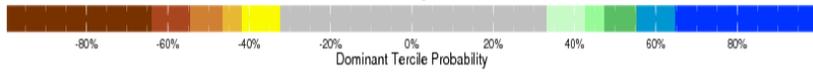
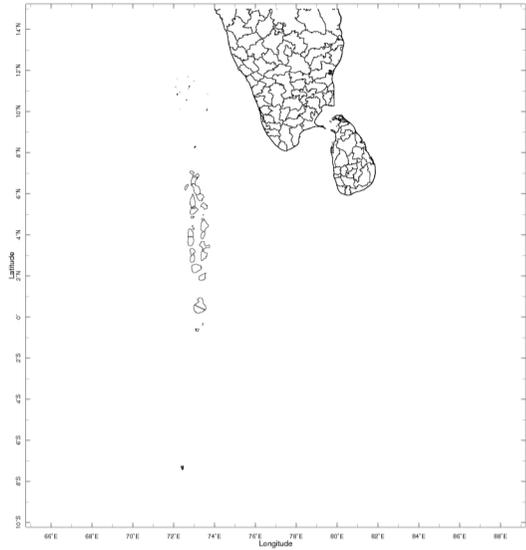


Total Six Day Precipitation Forecast

## Seasonal Rainfall and Temperature Forecast

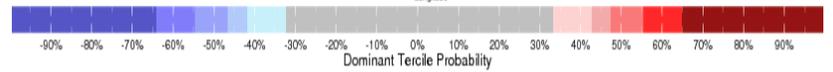
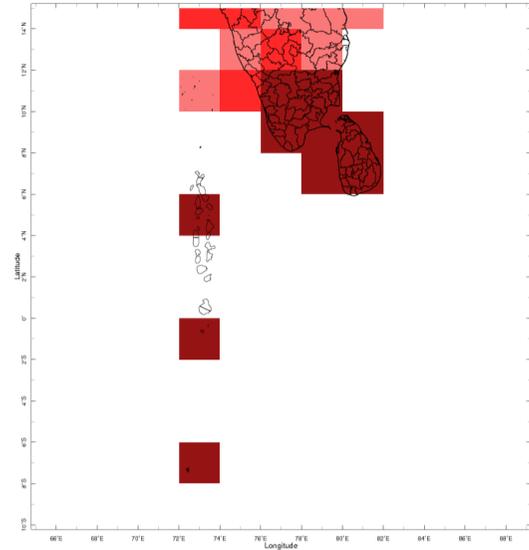
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 2016 IRI Seasonal Precipitation Forecast issued Mar 2016



Precipitation Forecast

Apr-Jun 2016 IRI Seasonal Temperature Forecast issued Mar 2016



Temperature Forecast

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