

Experimental Climate Monitoring and Prediction for the Maldives – April 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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April 25, 2016

PACIFIC SEAS STATE

April 21, 2016

During mid-April 2016 the positive tropical Pacific SST anomaly was weakening, indicating only a moderate strength El Niño. All atmospheric variables continue to support the El Niño pattern, but at reduced strength. This includes weakened trade winds and excess rainfall in the east-central tropical Pacific, extending eastward to a lesser extent than last month. Most ENSO prediction models indicate continued weakening El Niño conditions during the rest of the northern spring season, returning to neutral by late spring or early summer 2016, with La Niña development likely by fall.

(Text Courtesy IRI)

INDIAN OCEAN STATE

April 13, 2016

1°C⁰ Warmer than usual Sea surface temperature was observed around Maldives as is typical for an El Niño.



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Highlights

Northern and central islands did not receive any rainfall during March 2016, but southern islands received around 100 mm rain during this month. In the first weeks of April, around 20 mm rainfall was seen for the first time this year in northern island. Central and southern islands also received 80- 100 mm rainfall, which is higher compared to previous months, in April. Rainfall in May is usually higher than in April for all of Maldives. With the weakening of El Niño conditions, higher rainfall can be expected next month. The global climate models are predicting climatological rainfall but warmer than climatological temperatures across Maldives.

Summary

CLIMATOLOGY

Monthly Climatology: In April, Southern islands usually receive about 150 mm of rainfall. The wind direction in southern and central islands is easterly and in northern islands it's south-easterly. Rainfall usually increase up to 200 mm in May in the entire country. The wind direction remains the same but the speed increases. The rainfall in northern islands usually increases up to 250 mm in June, while it decreases to 150 mm in southern islands. Wind direction in June is usually easterly but with low speeds.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
9 th April 2016	Up to 100 mm Near Malé, 60 mm in Central and Southern islands
10 th April 2016	Up to 40 mm Near Gan
11 th - 14 th April 2016	No rainfall
15 th April 2016	Up to 30 mm in Central and Southern islands
16 th April 2016	Up to 120 mm Central and Southern islands
17 th April 2016	Up to 60 mm in southern-most islands- light rain in the rest of the country
18 th April 2016	Up to 40 mm in Northern and Central island
19 th April 2016	No Rainfall
20 th April 2016	Up to 140 mm in Southern Sea, 100 mm in the Western sea
21 st April 2016	Up to 120 mm in Southern islands, 30 mm in Central islands
22 nd April 2016	Up to 100 mm in Central islands, 50 mm in Southern islands, 120 mm in Eastern Sea
23 rd April 2016	No rainfall

Monthly and Seasonal Rainfall Monitoring: During March 2016, northern and central islands received less rainfall than expected while southern islands received more than expected. Northern islands remained dry during the 1st quarter of 2016. In April about 20 mm rainfall was seen for the first time of the year. As a result, the rainfall deficiency has grown to about 10%. Central islands also did not receive any rainfall during March, but did receive moderate amount (~60 mm) of rainfall in the early weeks of April. Southern islands also received about 100 mm in March and High rainfall continued in the first 3 weeks of April. These islands have received about 20% more rainfall than the average in the past 12 months.

PREDICTIONS

Weekly Rainfall Forecast: According to NOAA CFS models, only light rainfall is expected in the Maldives during 24th- 29th April.

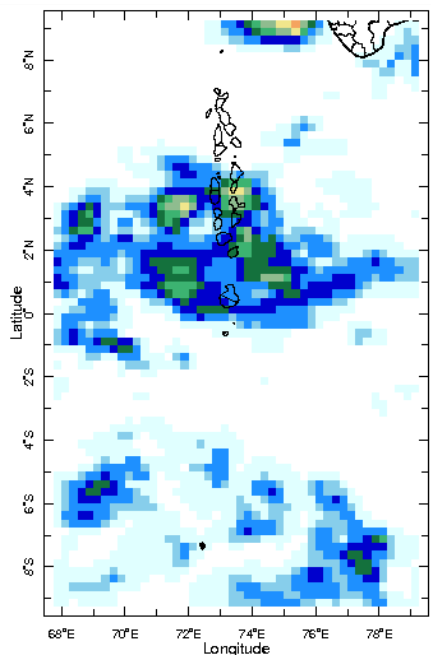
Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for May to July 2016, the rainfall shall be climatological in the entire country. The 3-month average temperature has a 70- 80% likelihood to be in the above-normal tercile during these 3 months in the entire country.

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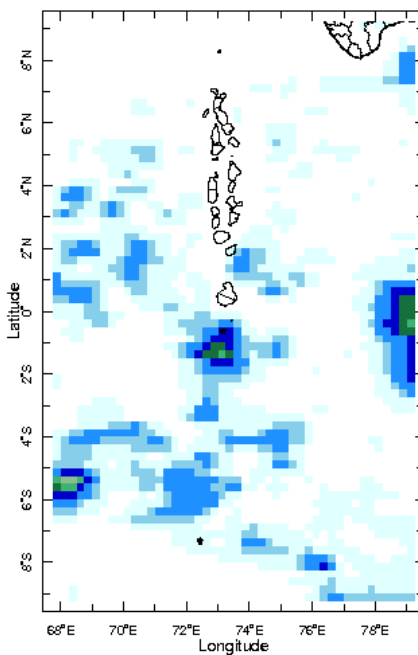
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 - b. Monthly Rainfall derived from Satellite Rainfall Estimate
 - c. Monthly and Seasonal Monitoring
3. Ocean Surface Monitoring
4. Rainfall Predictions
 - a. Weekly Predictions from NOAA/NCEP
 - b. Seasonal Predictions from IRI¹

Daily Rainfall Monitoring

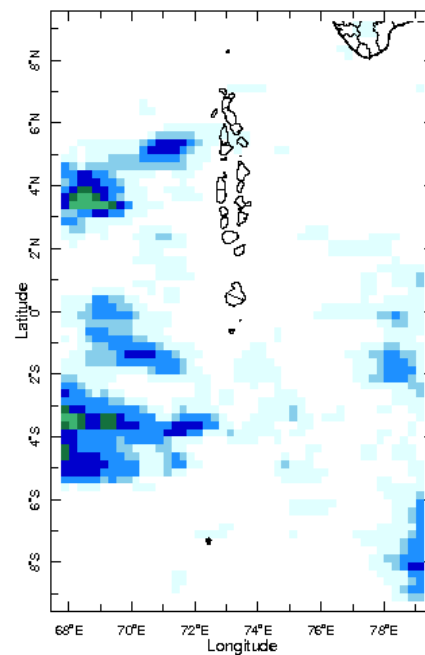
The following figures show the observed rainfall in the last 15 days in Maldives.



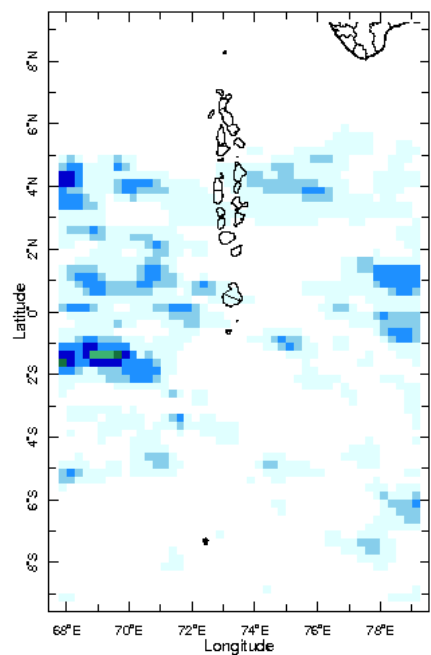
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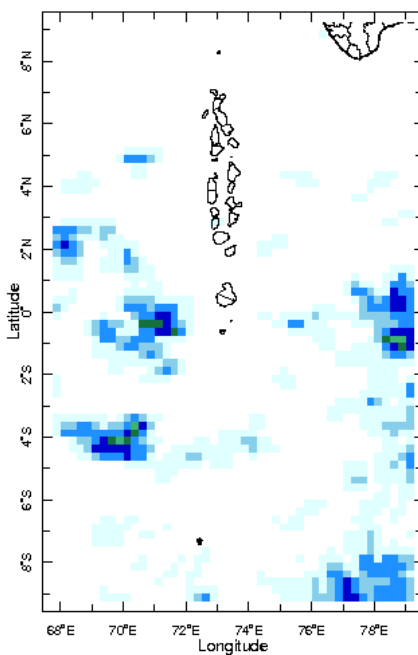
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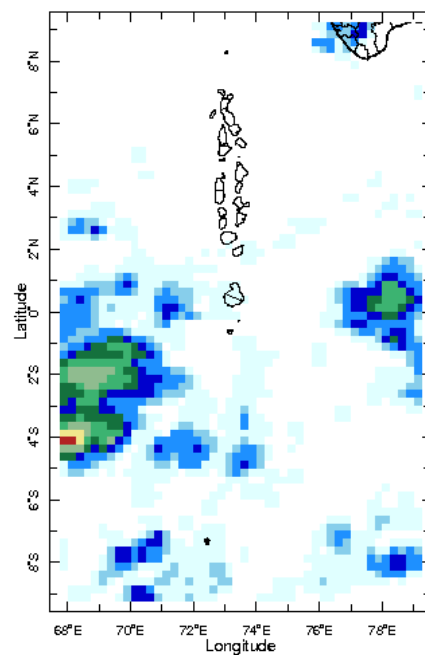
11 Apr 2016



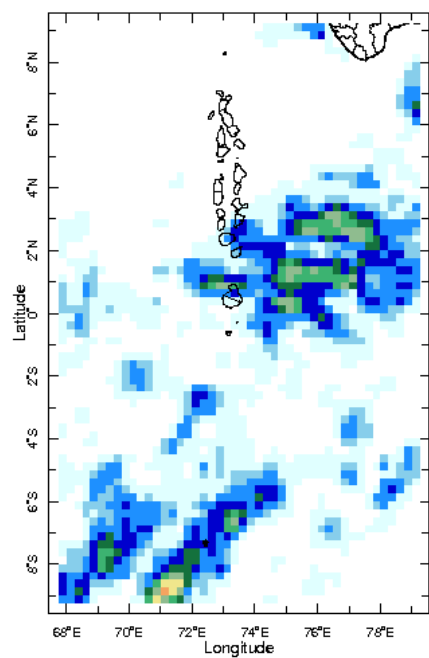
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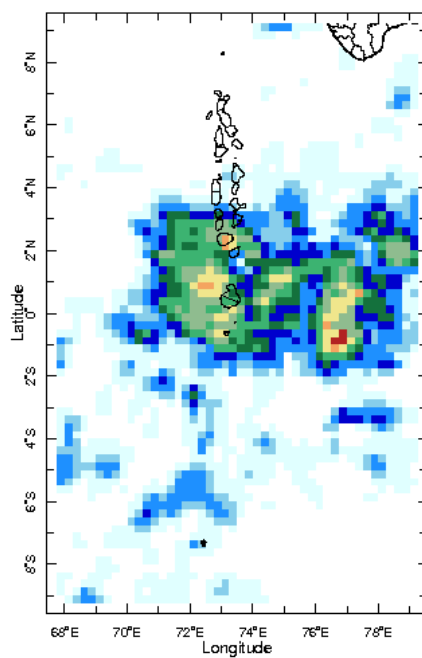
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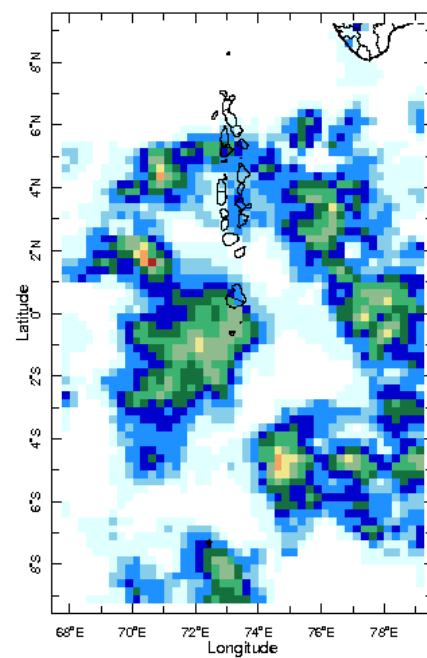
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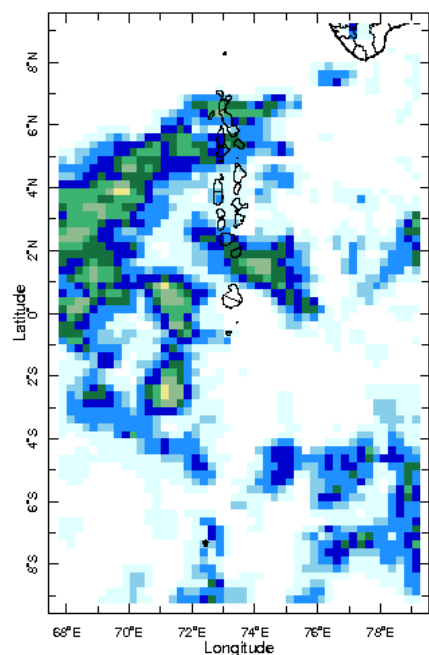
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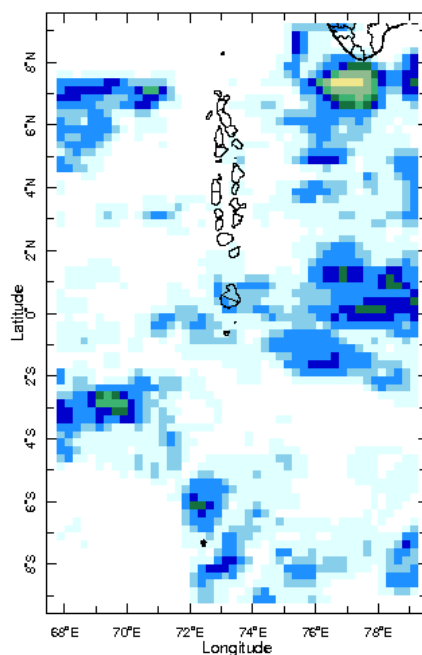
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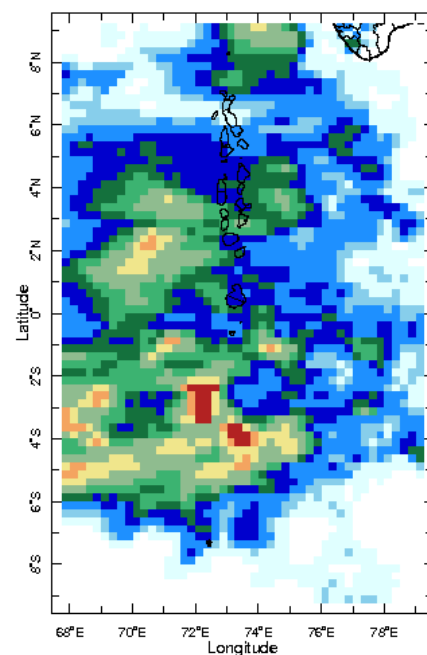
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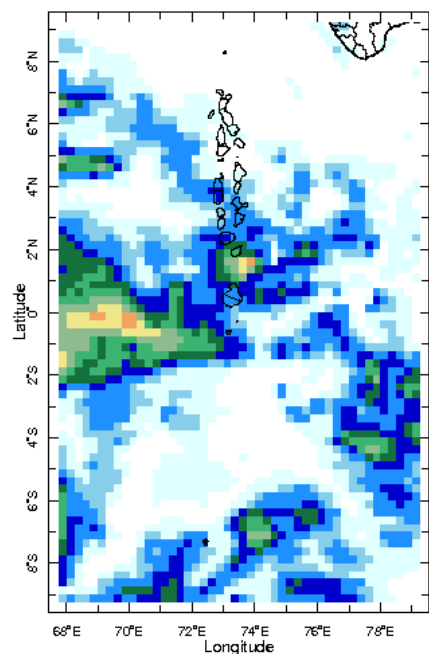
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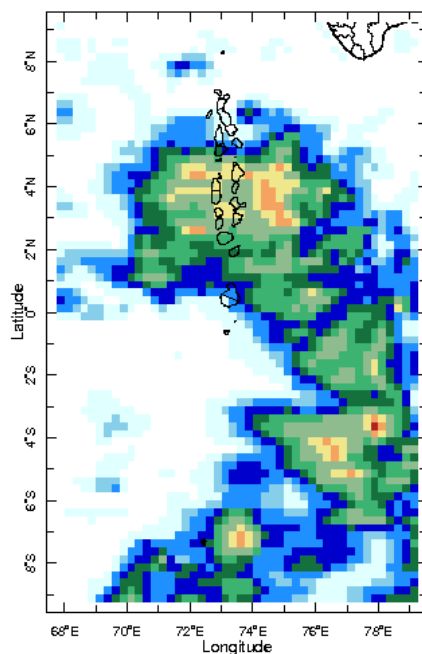
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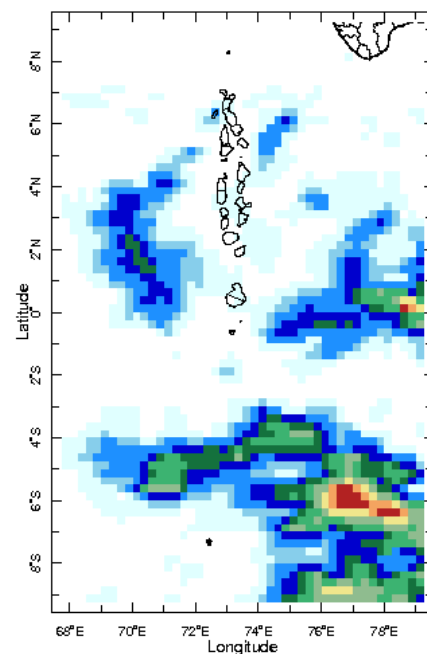
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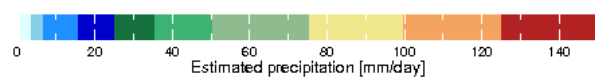
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22 Apr 2016

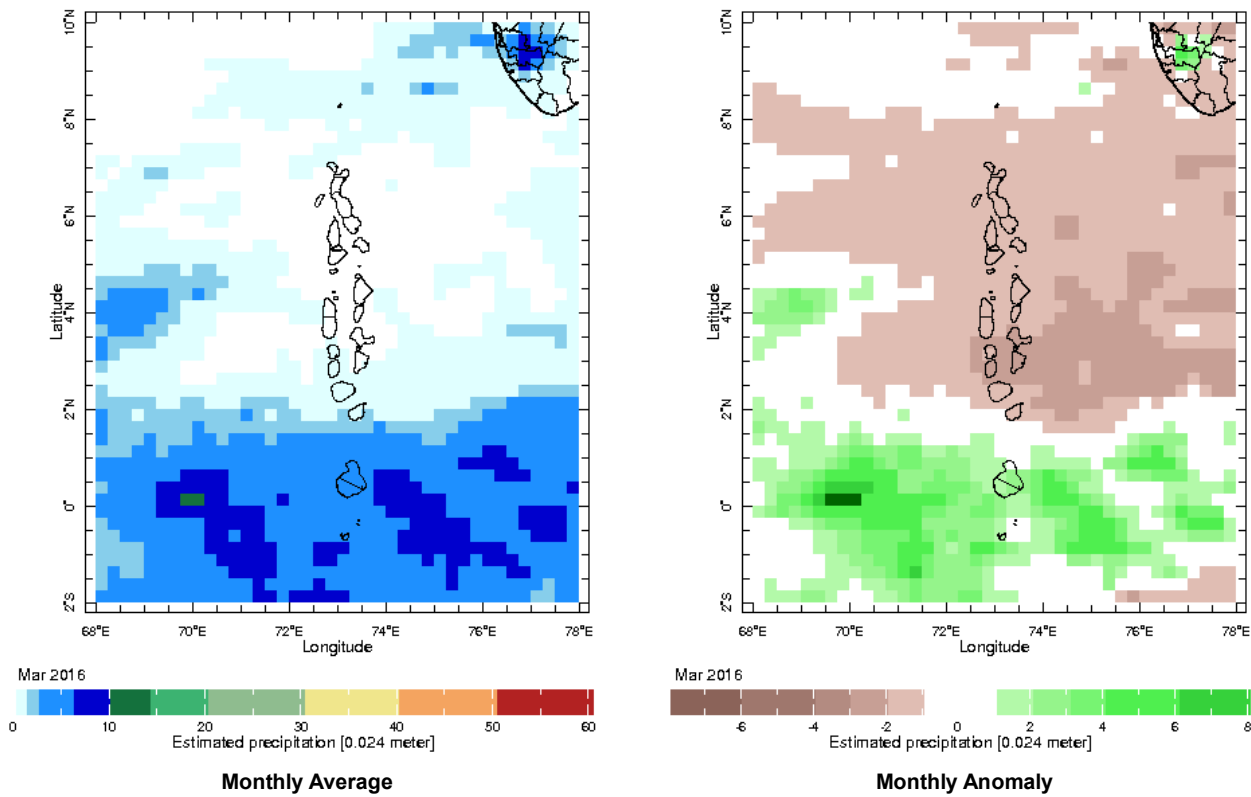


23 Apr 2016



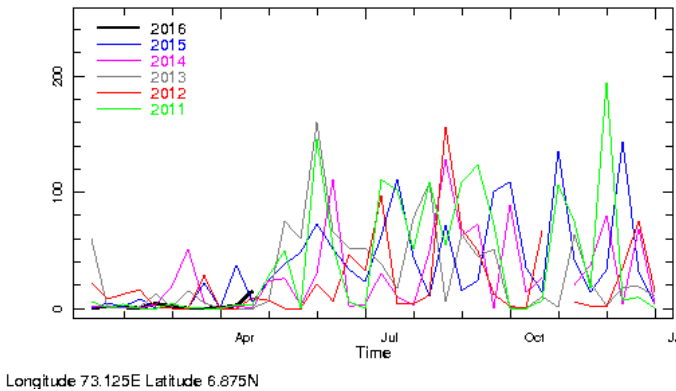
Monthly Rainfall Monitoring

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

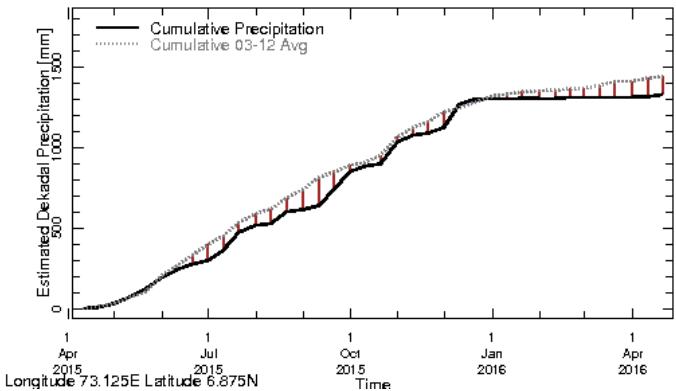


Monthly and Seasonal Monitoring

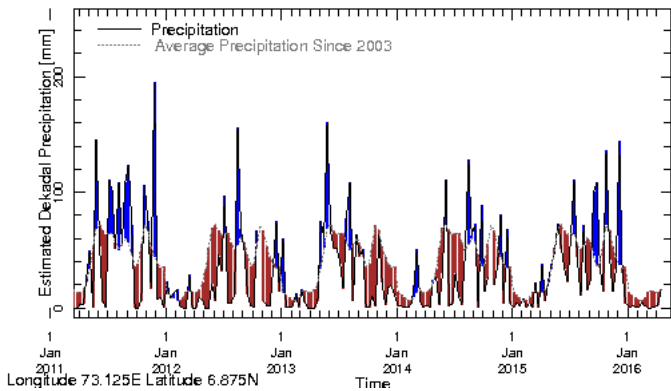
Northern Maldives:



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

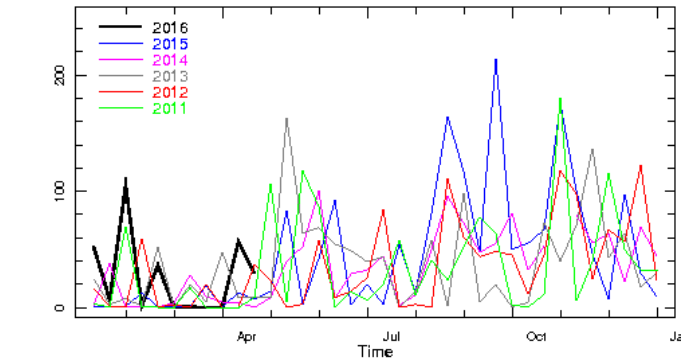


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

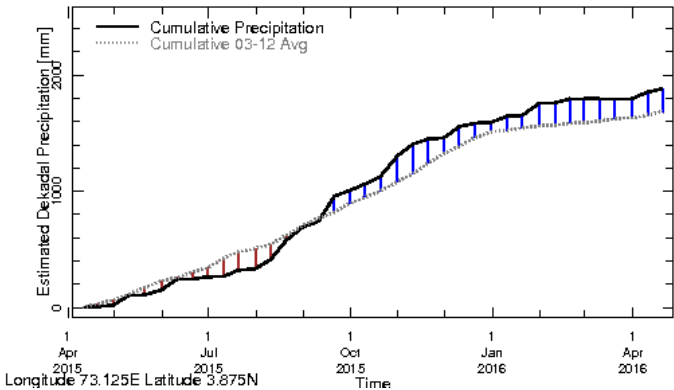


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

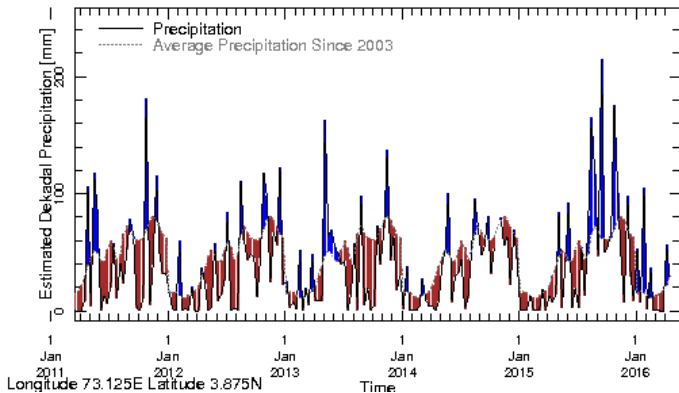
Central Maldives:



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

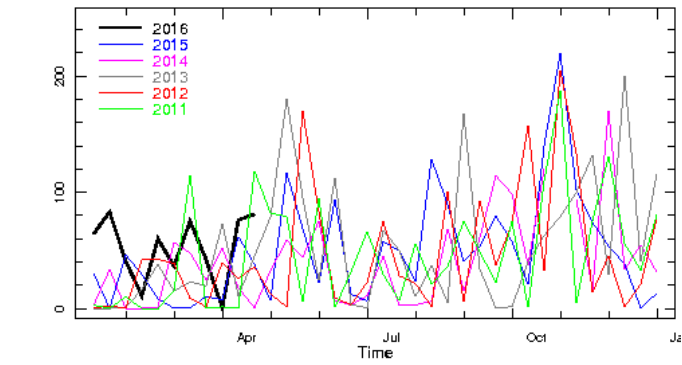


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

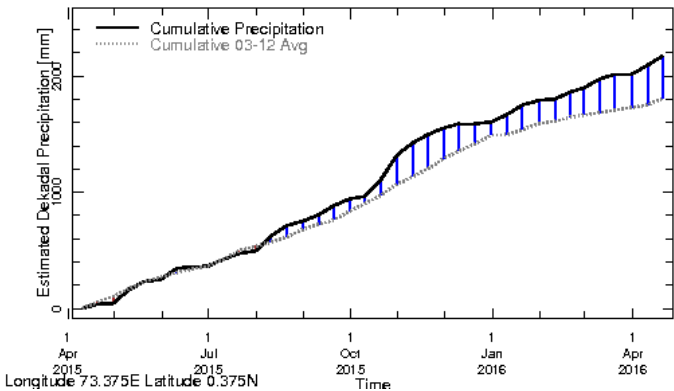


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

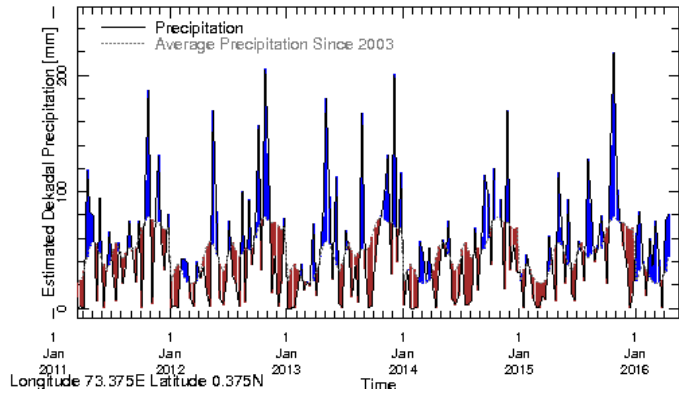
Southern Maldives:



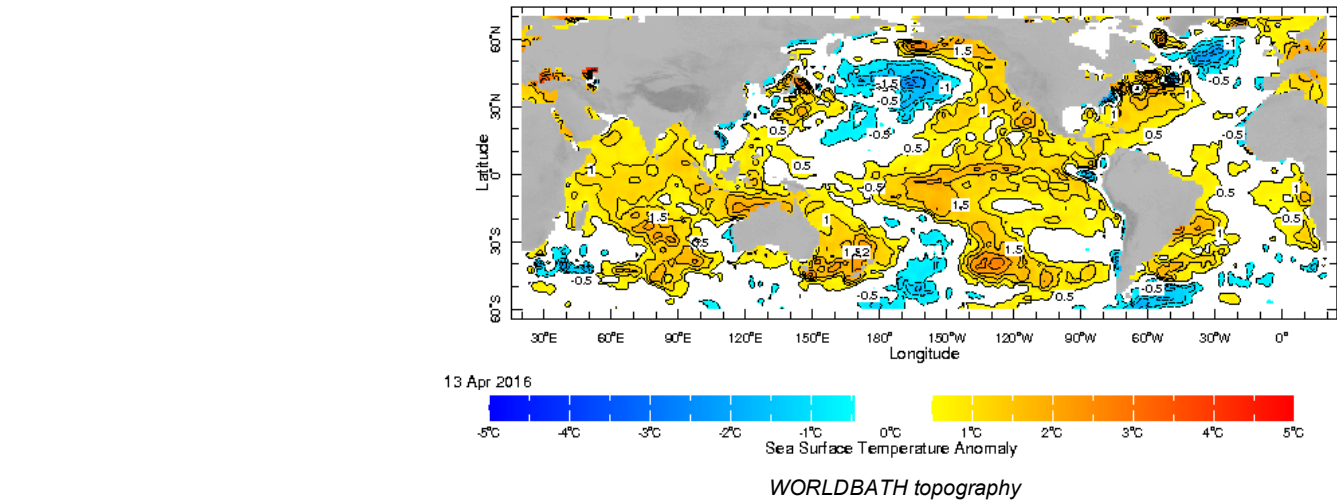
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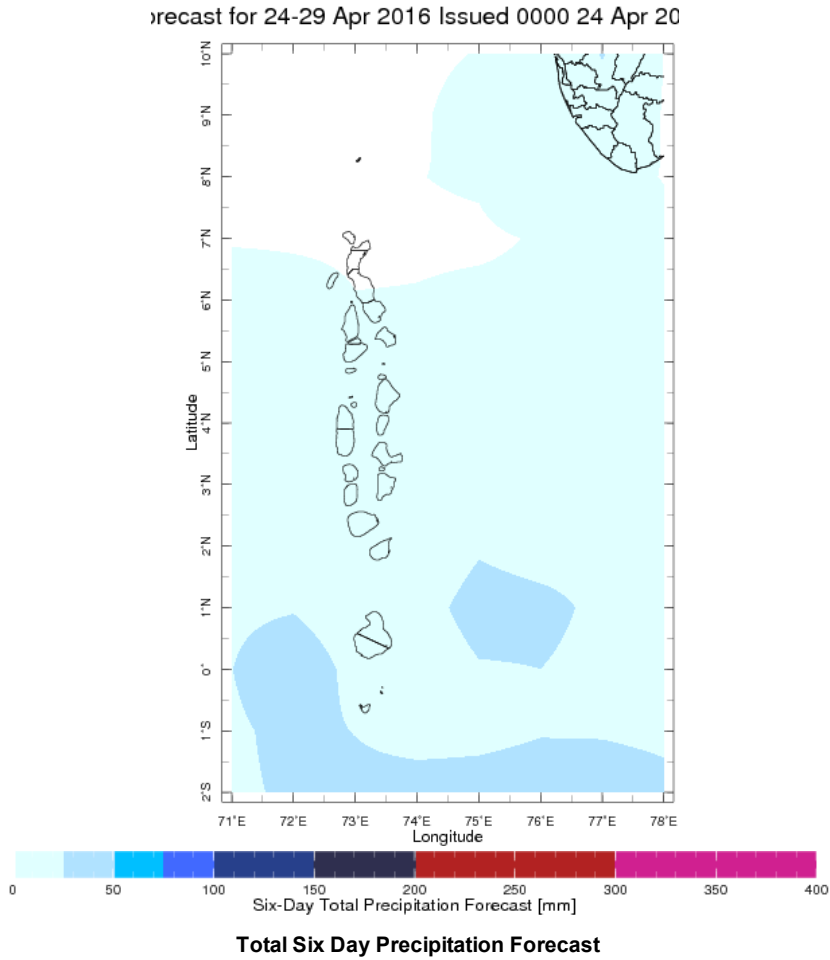
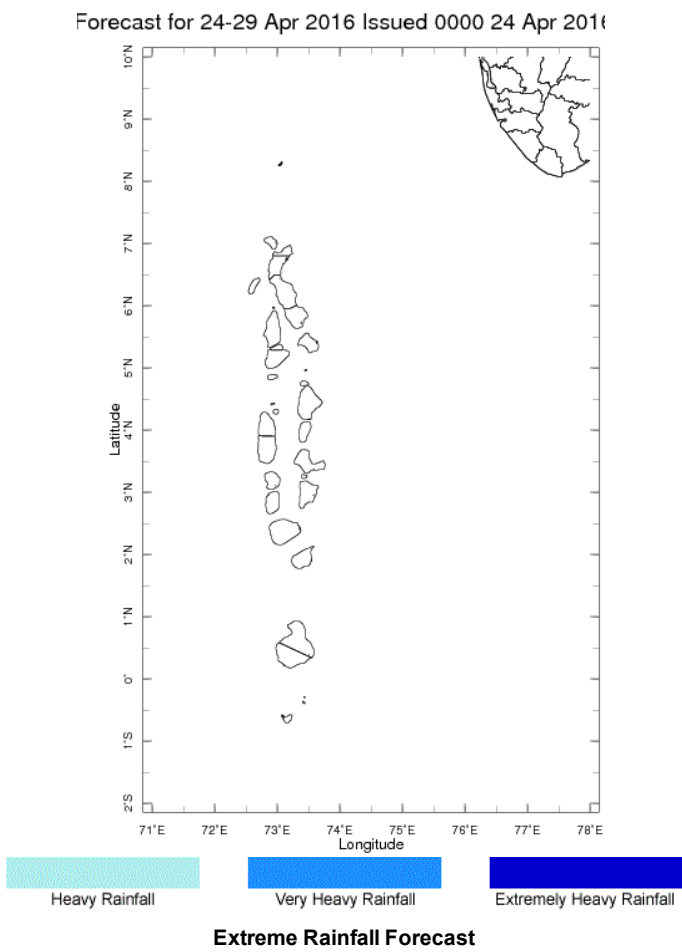


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown



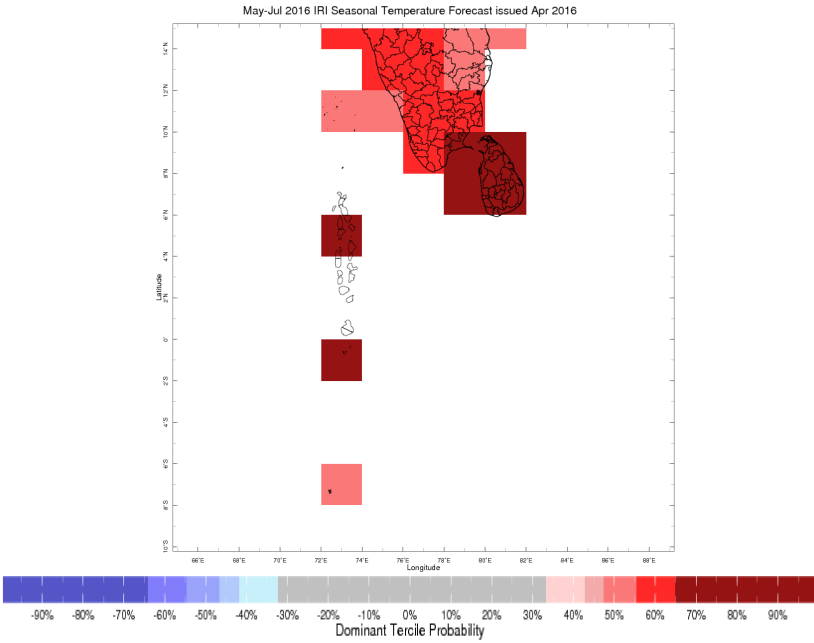
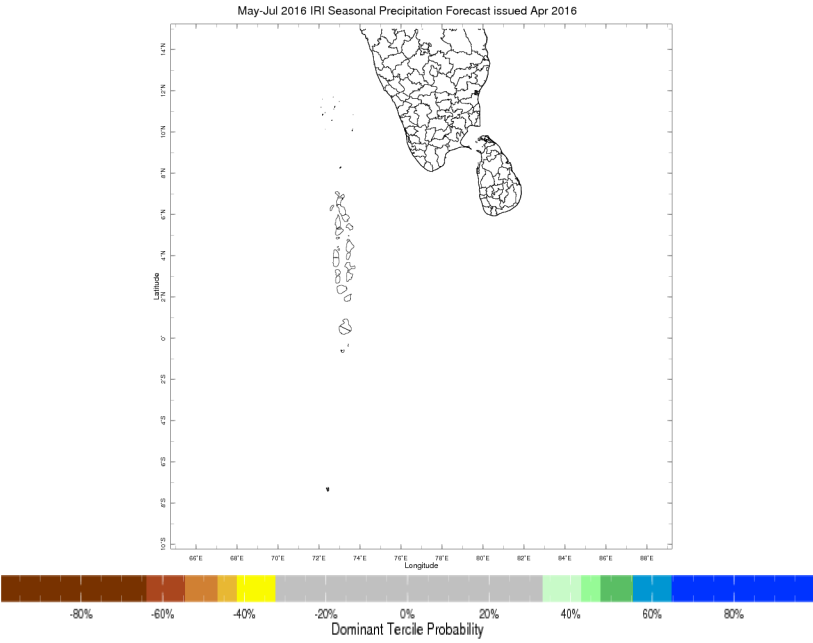
Weekly Rainfall Forecast

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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