FECT <u>Foundation for Environment</u> Climate and Technology c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.

Phone (+94) 81-2376746, 4922992

E-mail fectmv@gmail.com

Web Site <u>http://www.climate.lk</u>

Experimental Climate Monitoring and Prediction for the Maldives –October 2012

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and International Research Institute for Climate and Society

30 October 2012

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PACIFIC SEAS STATE

October 18, 2012

More than 80% of the ENSO prediction models predict El Nino SST conditions during the September- November season, continuing into Northern winter 2012-13. Among those predicting El Nino, very few predict more than a weak event. (Text Courtesy IRI)

INDIAN OCEAN STATE

October 18, 2012

The tropical Indian Ocean shows unusually warm anomalies in the Arabian Sea and at the same latitudes to South of the Equator. The Indian Ocean Dipole shows a warm positive phase. These are likely to alter climate drastically. **Highlights**² After a wet August, rainfall continues to decrease in the first half of October in North and Central islands of Maldives and drought conditions continue to persist. In contrast, the Southern islands received highest recorded rainfall in September for the last 5 years. For the October-December season, wetter conditions are predicted for central Maldives and near-normal conditions are predicted for the southern regions. Warmer than average conditions driven by the warm Arabian Sea surface conditions shall be felt throughout the Maldives.

Summary² CLIMATOLOGY

Monthly Climatology: The climatology refers to the average conditions experienced historically for a given month. Usually the climatology is a good guide to what one may expect in a given month absent other information. The historical average rainfall for the Northern islands is high in July (200-250 mm), higher in August (250- 300 mm) and drops in September & October (100- 200 mm). In the Central islands rainfall is usually moderate (150- 200 mm) during the August – October period. Heavy rainfall is typical for the Southern islands during these four months. The winds over the Northern & Central islands are usually westerly (from West to East) and wind speeds are expected to be high. For Southern islands, low wind speeds are expected for July and August but stronger westerly winds in September and October.

MONITORING

Weekly Monitoring: During 11th to 16th of October, 0-20 mm rainfall was observed over entire Maldives. Islands in the South received more rainfall than Islands in the North.

Monthly and Seasonal Monitoring: In North and Central islands of Maldives, the amount of rainfall received continues to drop after experiencing heavy rains in August. The rainfall deficit also continues to increase. But in Southern islands, highest amount of rainfall in this year was observed in October and it has been increasing gradually in past two weeks. This amount of rainfall is in fact the highest reported among other Octobers in last 5 years. The rainfall deficit in this region has also decreased.

Sea Surface Temperatures and ENSO state: In the Pacific, the ENSO state has moved towards an El Nino state. The unusually warmer sea surfaces of the Arabian Sea/Central Western Indian Ocean are stronger than normal during El Nino periods. Past work has shown that these conditions lead to lower than average rainfall in Sri Lanka and Northern and Central Maldives upto September followed by be higher than average for October to December.

PREDICTIONS

Weekly Rainfall Forecast: Dry conditions are expected for Maldives for the period of $17^{\text{th}} - 22^{\text{nd}}$ of October 2012. **Seasonal Rainfall and Temperature Prediction:** As per IRI Multi Model Probability Forecast for October 2012 to February 2013, there is a 40- 60% probability for precipitation to be above normal. Furthermore, there is 40- 70% probability for Temperature to be above-normal.

Inside this Issue

- 1. Monthly Climatology
- 2. Rainfall Monitoring
 - a. Daily Satellite derived Rainfall Estimates
 - b. Monthly Rainfall derived from Satellite Rainfall Estimate
 - c. Monthly and Seasonal Monitoring
 - d. Weekly Average SST Anomalies

mate 3. Rainfall Predictions

- a. Weekly Predictions from NOAA/NCEP
- b. Seasonal Predictions from IRI¹

¹ International Research Institute for Climate and Society.

² These interpretations of climatic conditions are an experimental product. Please consult with the Maldives Meteorological Services for advice on interpretation.

c/o, Maintenance Office, Mahaweli Authority, Foundation for Environment Climate and Technology Digana Village, Rajawella, Sri Lanka.

E-mail fectmv@gmail.com

Web Site <u>http://www.climate.lk</u>

1). Monthly Climatology (CAMS-OPI):

Phone (+94) 81-2376746, 4922992



a) Rainfall: Maps: September, October, November, December (Left-Right)

Time Oct Pressure 925. mb

Time Nov Pressure 925. mb



December

January

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Rainfall Climatology for Maldives Islands for October, November and December 2012 and January 2013. Islands on the Top, Middle and Bottom are roughly assumed as Northern, Central and Southern Respectively.

2) Rainfall Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 11th- 16th October, 2012 (Left-Right, Top-Bottom)



Foundation for Environment c/o, Maintenance Office, Mahaweli Authority, H Digana Village, Rajawella, Sri Lanka. Climate and Technology

Phone (+94) 81-2376746, 4922992

E-mail fectmv@gmail.com

Web Site <u>http://www.climate.lk</u>



b) Monthly Rainfall (June to September 2012), Derived from Satellite Rainfall Estimates

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c) Seasonal to Annual Rainfall Monitoring

i) For Northern Maldives

1) Rainfall in 2012 (black) compared to rainfall in previous 5 years



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



3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.





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E-mail fectmv@gmail.com

Web Site <u>http://www.climate.lk</u>

ii) For Central Maldives



1) Rainfall in 2012 (black) compared to rainfall in previous 5 years





3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.



t c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.

FECT <u>Foundation for Environment</u> c/o, M Climate and Technology Denoie (+94) 81-2376746, 4922992 E-mail <u>fectmv@gmail.com</u>

Web Site <u>http://www.climate.lk</u>

iii) For Southern Maldives



1) Rainfall in 2012 (black) compared to rainfall in previous 5 years





3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.



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d) Weekly Average SST Anomalies (⁰C), 7th -13th October, 2012



Data Source: NCEP, Environmental Monitoring Center

Base Period of Climatology: 1971-2000

3). Predictions

a) Weekly Precipitation Forecast for 17th -22nd October, 2012: Issued 17th October, 2012



Climate and Technology c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.

Phone (+94) 81-2376746, 4922992

3

E-mail fectmv@gmail.com

Web Site http://www.climate.lk

b) Seasonal Rainfall and Temperature Predictions from IRI



IRI Multi-Model Probability Forecast for Precipitation for November-December-January 2013, Issued September 2012





b) Seasonal Climate Predictions (IRI) continued



IRI Multi-Model Probability Forecast for Temperature for October-November-December 2012, Issued September 2012

