Federation for Environment, Climate and Technology

c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.
Phone (+94) 81-2376746, 2300415 E-mail: fectsl@gmail.com
Web Site http://www.climate.lk

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EXPERIMENTAL CLIMATE MONITORING AND PREDICTION

By: Piushani Ellegala, Chethana Chandrasiri, Chayana Gunathilake, Nipuni Alahakoon, Lareef Zubair and Michael Bell[1] (FECT and IRI[1])

HIGHLIGHTS

Rainfall Forecast

- *The NOAA weekly rainfall forecast predicts up to 20mm Monaragala district during 23th -29th August.*

Monitored Rainfalls

- *Between 16th - 22nd August: up to 20 mm of rainfall was recoreded in Moneragala district on 17th August.*

Monitored Wind

- *From 16th- 22nd August: up to 10 km/h, northwesterly winds were experienced by the entire island.*

Monitored Sea Surface

- *1^{0}C above average sea surface temperature was observed in the seas around Sri Lanka.*

Monitoring

Rainfall

Weekly Monitoring

Date	Rainfall
16th August	Up to 15 mm in Jaffna and Kilinochchi districts; and up to 10 mm in Ampara, Badulla, Batticaloa, Gampaha, Kandy, Kegalle, Kurunegala, Mannar, Matale, Nuwara Eliya, Polonnaruwa, Ratnapura and Vavuniya districts.
17th August	Up to 20 mm in Monaragala district; and up to 10 mm in Badulla district.
18th August	No rainfall
19th August	up to 10 mm in Vavuniya district.
20th August	Up to 10 mm in Jaffna district.
21st August	Up to 2.5 mm in Moneragala district.
22nd August	Up to 5.0 mm in Badulla, Colombo, Gampaha, Kaluthara, Kegalle, Kurunegala, Matale, Moneragala, Nuwara Eliya and Ratnapura districts.

Total Rainfall for the Past Week

The RFE 2.0 tool shows total up to 10 – 25 mm in Ampara, Badulla, Kandy, Matale, Moneragala and Polonnaruwa districts; up to 5-10 mm in Colombo, Gampaha, Jaffna, Kalutara, Kegalle, Kurunegala,

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Nuwara Eliya and Ratnapura districts; and up to 2 – 5 mm in Anuradhapura, Hambantota, Kilinochchi, and Mannar districts.

Below rainfall average up to 25 - 50 mm in Ampara, Anuradhapura, Badulla, Colombo, Galle, Gampaha, Kalutara, Kandy, Kegalle, Kilinochchi, Mannar, Matale, Mullaitivu, Nuwara Eliya, Polonnaruwa, Ratnapura, Trincomalee and Vavuniya districts and up to 10 – 25 mm in Batticaloa, Hambantota, Jaffna, Kurunegala, Matara, Moneragala and Puttalam districts.

Monthly Monitoring

During July – Above average rainfall conditions up to 8 mm were experienced by Anuradhapura, Matale, Polonnaruwa and Vavuniya districts; up to 6 mm in Ampara, Badulla, Hambantota, Jaffna, Kandy, Kilinochchi, Kurunegala, Mannar, Moneragala, Mullaitivu, Nuwara Eliya, Puttalam, Ratnapura, and Trincomalee districts; and up to 4 mm in Batticaloa, Colombo, Galle, Gampaha, Kalutara, Kegalle, and Matara districts.

Ocean State *(Text Courtesy IRI)*

Pacific sea state: August 19, 2020

SSTs in the east-central and central Pacific decreased to near the La Niña threshold in mid-august, and the atmospheric variables were either ENSO-neutral or indicative of weak La Niña conditions. The average of the forecasts of many models just short of the borderline of weak La Niña SST conditions through fall, becoming slightly weaker beginning in early winter. The official CPC/IRI outlook is somewhat similar to these model forecasts, calling for a likely continuation of ENSO-neutral in summer, with approximately equal chances of ENSO-neutral or La Niña for fall and winter.

Indian Ocean State

1 ^{0}C above average sea surface temperature was observed in the seas around Sri Lanka.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 24th August– 30th August: Total rainfall up to 55 mm in Galle, Gampaha, Kalutara, Kegalle and Ratnapura districts; up to 45 mm in Hambantota, Kandy, Kurunegala, Matale, Matara, Nuwara Eliya and Puttalam districts; up to 35 mm in Ampara, Anuradhapura, Badulla, Moneragala and Polonnaruwa districts; and up to 25 mm in Batticaloa district.

From 31st August– 06th September: Total rainfall up to 85 mm in Galle, Kalutara and Ratnapura districts; up to 75 mm in Colombo, Hambantota, Kegalle and Matara districts; up to 55 mm in Badulla, Gampaha, Kandy, Moneragala and Nuwara Eliya districts; up to 45 mm in Kurunegala, Matale, and puttalam districts; up to 35 mm in polonnaruwa district; up to 25 mm in Ampara district; and up to 15 mm in Anuradhapura, Batticaloa, and Mannar districts.

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NOAA Model Forecast:

From 23th August – 29th August: Total rainfall up to 75 mm in Moneragala and Badulla districts; and up to 50 mm in Ampara, Nuwara Eliya, Batticaloa, Matale and Kandy districts.

MJO based OLR predictions

For the next 15 days:

MJO shall significantly enhance rainfall during 28th August – 6th September.

[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

Inside This Issue

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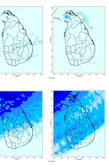
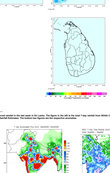
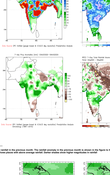
MONITORING

Daily Rainfall Monitoring

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

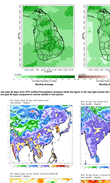






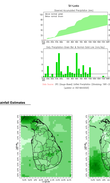
Weekly Rainfall Monitoring

The following figures show the weekly observed rainfall in the last seven days in Sri Lanka. The figures to the left is a false merge rainfall Global Weather Prediction Center (GPC) Unified Precipitation Analysis and the figures to the right is the Climate Hydrology Group (CHG) Gridded Rainfall Analysis.



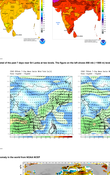
Monthly Rainfall Monitoring

The following figures show the monthly observed rainfall in the previous month. The rainfall anomaly in the previous month is shown on the figure to the right. The lesser value in the anomaly figure shows above which monthly rainfall has been in the month of interest while the large value means above which rainfall is below average rainfall. Further details about the rainfall maps may be found on request.



Monthly Rainfall Monitoring

The figure to the top left shows the total rainfall in the past 30 days from GPC Unified Precipitation Analysis while the figure to the top right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the rainfall anomaly in the past 30 days from the two different sources.



Monthly Rainfall Monitoring

The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

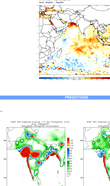
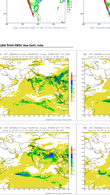
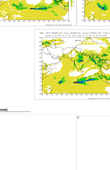


Figure 1: 30 Day Observed Rainfall, Climatology, 1981-2010

Detailed (10 Day) Satellite Derived Rainfall Estimates



Weekly Temperature Monitoring



Weekly Wind Monitoring

The following figures show the mean zonal wind (top) and the mean meridional wind (bottom) in the last 7 days (left) and last week (right) in the last 7 days (middle) 850 mb (1.5 km) and the last week (right) at the high altitude 200 mb (12.0km) level.

Weekly Average SST Anomalies

Weekly average Sea Surface Temperature (SST) anomaly in the overall Tropical Belt (60N-60S)

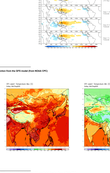
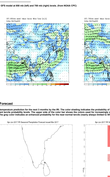


Figure 2: Weekly Average SST Anomalies in Tropical Belt (60N-60S)

Optimum Interpolation Sea Surface Temperature Anomaly in the Indian Ocean (Year-Wise)



FORECASTS

NCEP GFS 7- 14 Day prediction

IMD GFS (T574) Model Rainfall Forecast from IMD(Apr-Jun, July

WRF Model Forecast (from IMD Channel)

Weekly Rainfall Forecast from IRI

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

Madden Julian Oscillation (MJO) Unfolded Outgoing Longwave Radiation (OLR) Forecast

Madden Julian Oscillation (MJO) is the most dominant mode of tropical intraseasonal variability. It is characterized by eastward propagation of zones of enhanced cloudiness and suppressed tropical weather and Orange shading indicates low OLR(MJO Conditions). The following figure is shows the forecast of MJO propagation according to the model forecast and the observed conditions for the last 30 days and the forecast for the next 15 days.

Weekly Temperature Forecast

Weekly Minimum and Maximum Temperature predictions from the NOAA Climate Model (CPC)

Weekly Wind Forecast

Weekly mean zonal wind level predictions from the GFS model at 850 mb (left) and 200 mb (right) levels. (from NOAA CPC)

Seasonal Rainfall and Temperature Forecast

Following are the latest seasonal rainfall and temperature predictions for the 3 months by the IRI. The color shading indicates the probability of the most dominant category. In that is, the bands having the highest forecast probability. The color shading represents the probability of the most dominant category. The probability of the other two categories is the same for all three categories in a given region. The probability of the most dominant category ranges from 33 to 100%.

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Climate Change Secretariat
Ministry of Mahaweli Development and Environment
Climate Change Secretariat
Ministry of Mahaweli Development and Environment
Colombo, Sri Lanka
Tel: +94 11 2877280/1
Fax: +94 11 2877282
Email: climate@mahaweli.gov.lk
Web: www.climate.lk

Foundation for Environment, Climate and Technology
Climate Change Secretariat
Ministry of Mahaweli Development and Environment
Colombo, Sri Lanka
Tel: +94 11 2677001
Fax: +94 11 2677003
Email: info@fect.org
Web: www.fect.org