

Weather Synopsis –June 2022.

Below normal rainfall was reported from most of the principal meteorological stations except Anuradhapura, Polonnaruwa, Vavuniya, Trincomalee Pottuwil, Badulla, and Bandarawela, stations located at northcentral and eastern parts where above normal rainfall was reported (Fig 1A). All of the hydro catchment stations reported below normal rainfall. (Fig 2).

Figure 3 depicted lightning flash density map for June 2022. High lightning density was reported from Vavuniya North, Welioya, Kebithigollawa, Madhu, Madulla, Medagama, , Ridimaliyadda, Padiyathalawa, Seruwawila, Lankapura, and Medirigiriya

Fairly widespread showers with isolated fairly heavy falls were reported from southwestern quarter on 01st, 02nd, 06th , and 15th ,

Except for a few light showers in southwestern parts mainly dry weather was evident on 08th , on 13th and during the last few days of the month from 26th to 30th .

Mostly above normal day temperatures and night temperatures were experienced during the month of June 2022. Highest recorded maximum temperature was 37.5⁰C at Batticaloa on 25th and lowest recorded minimum temperature was 12.8.7⁰C at NuwaraEliya on 23rd .

La Nina conditions were observed during Month of June 2022. Ocean Nino Index is -1.0, -0.9 and -0.8 during April to June (AMJ) May to July (MJJ) and June to August (JJA) respectively (NOAA Climate prediction Center). Neutral IOD was observed during June 2022 (BoM, Australia). Sea surface waters in tropical Indian Ocean are warmer than average (Fig. 4)

The average position of the shear line was laid around Equator from 40⁰E to 70⁰E, between Equator and 02⁰S from 70⁰E to 100⁰E and between Equator to 05⁰N from 100⁰E to 120⁰E (Fig 5). It was fluctuated to the 03⁰ north and south of average position.

Strong Madden-Julian Oscillation (MJO) was at phase 7 on 01st June, from 02 to 06 at phase 8, from 07 to 20th at phase 01, from 21st to 27th at phase 2, and from 28th to 30th at phase 3 (Fig. 6).

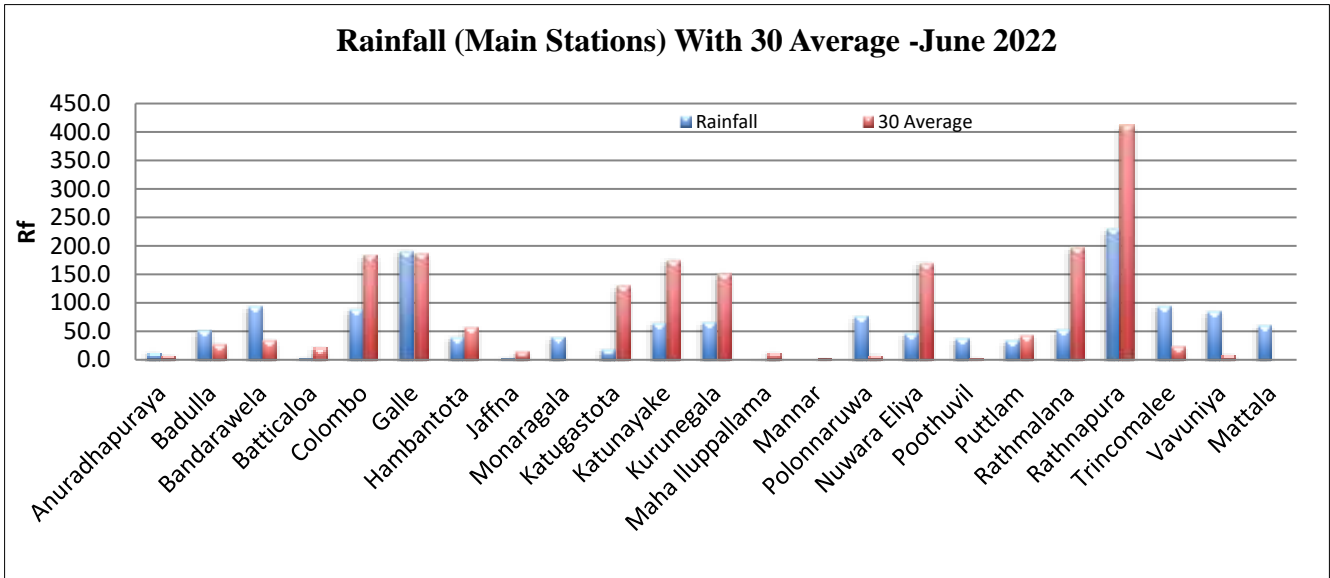


Fig 1A: Monthly Total Rainfall(mm) with 30 years (1961-1990) of their averages at Main Meteorological stations areas during June 2022

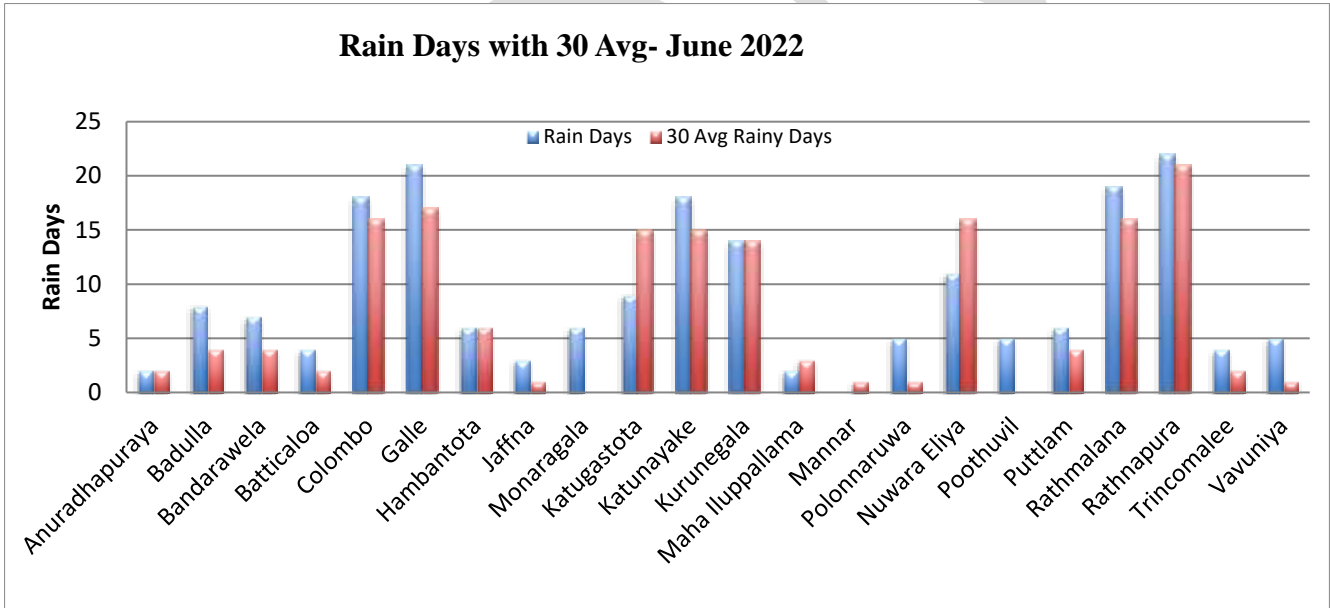


Fig 1B: monthly total no of rainy days with 30 years (1961-1990) of their averages at main Meteorological stations during June 2022

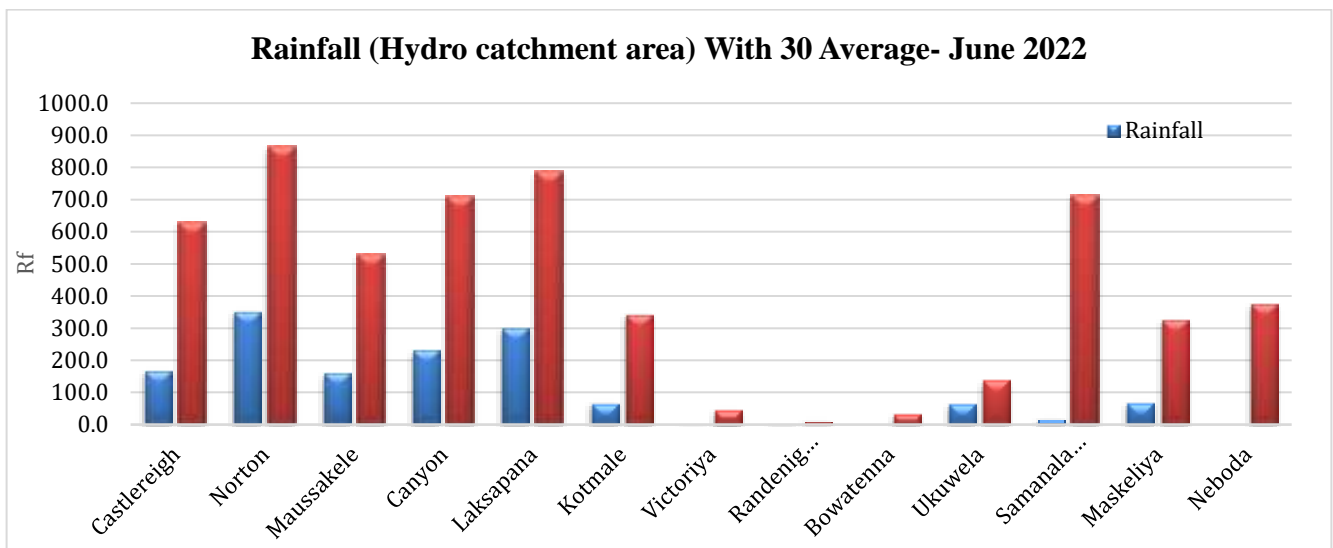


Fig 2: Monthly Total Rainfall(mm) with 30 years (1961-1990) of their averages at Hydro catchment areas during June 2022

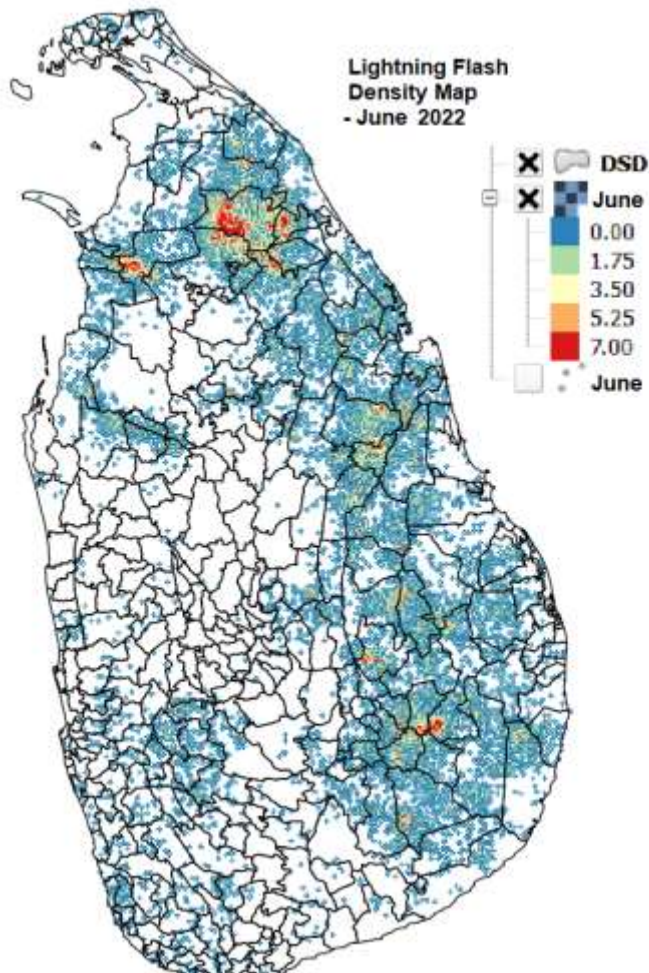


Fig 3 : Lightning flash density map for June 2022

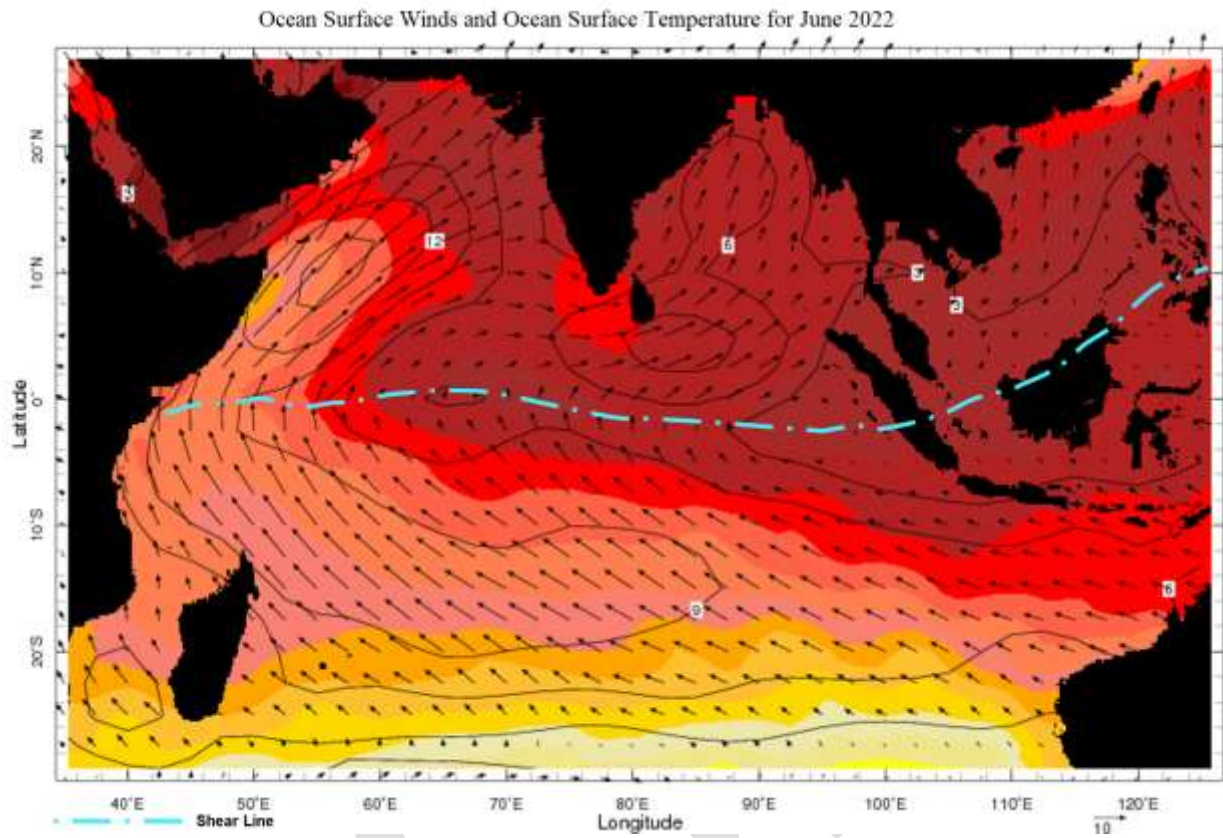


Fig 4: Ocean Surface Winds and Ocean Surface Temperature for June 2022

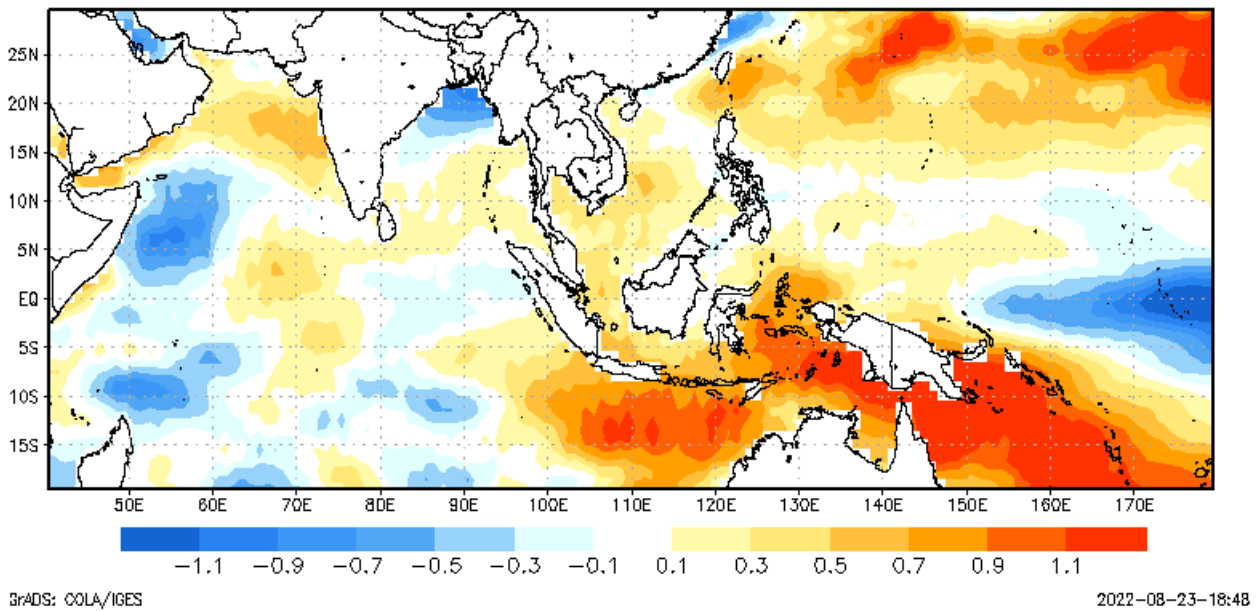
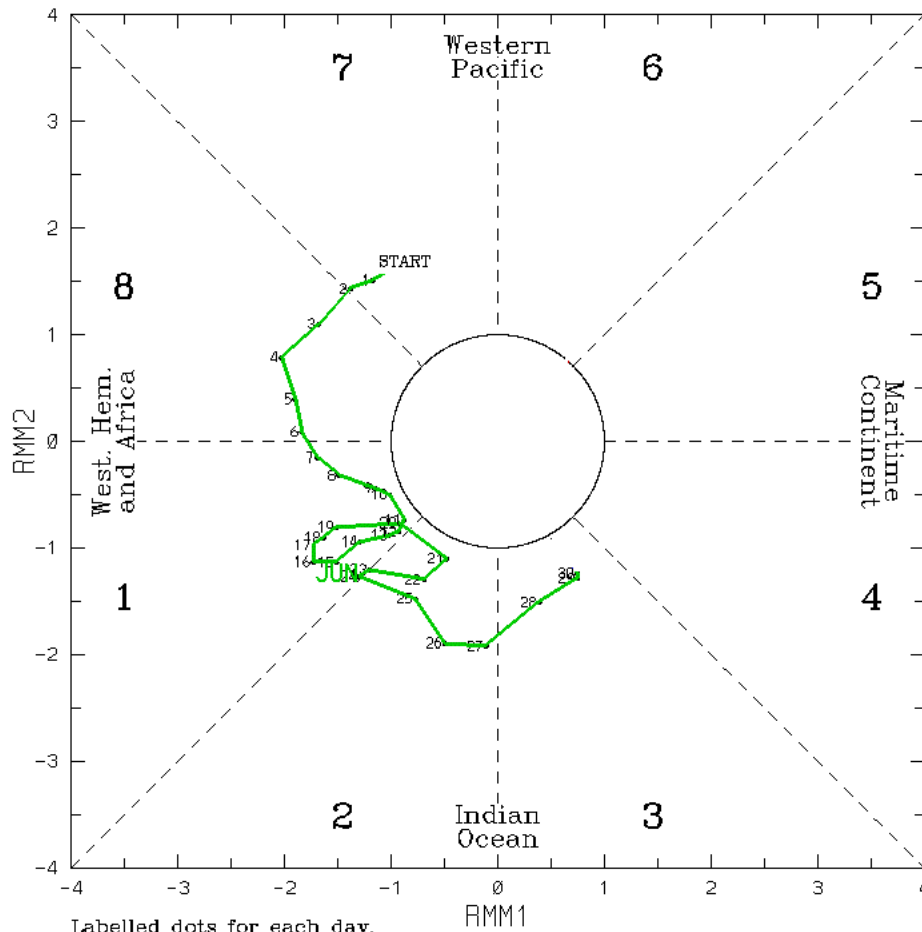


Fig 5: Sea Surface Temperature anomalies for June 2022

(RMM1,RMM2) phase space for 01-Jun-2022 to 30-Jun-2022



Labelled dots for each day.

Blue line is for Jul, green line is for Jun, red line is for May.

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2022

Fig 6 : Phase diagram of MJO Index

Surface pressure and winds: The surface pressure was below average except from 11th to 13th; from 18th to 19th and from 23rd to 28th. The pressure gradient was steep on 03rd, 05th and 30th, moderate from 01st to 02nd, on 04th; from 06th to 13th; from 21st to 26th; and from 28 to 29th and mild from 14th to 16th; and from 18th to 20th and on 27th. Pressure distribution is fairly even on 17th. The surface wind was westerly to South-westerly for the rest of the month and speed varied within 05-15kts..

Upper winds:

At 850hPa, Westerly to north-westerly wind flow is dominated over the island. Anomalous easterly flow suggest that weakening of monsoon flow at 850mb level (Fig 7) .

At 700 hPa, Westerly wind flow is dominated over the island. Anomalous southeasterly flow suggest that weakening of monsoon flow at 700mb level (Fig 8).

At 500 hPa, Westerly wind flow is dominated over the island Cyclonic circulation was appear north-eastern part of Sri Lanka (Fig 9) suggesting favourable to condition to develop evening thunderstorms over leeside.

The 250 hpa the upper tropospheric ridge was laid from 27⁰N 40⁰E to 28⁰N 100⁰E . Tropical easterly jet was appeared in the vicinity of Sri Lanka.

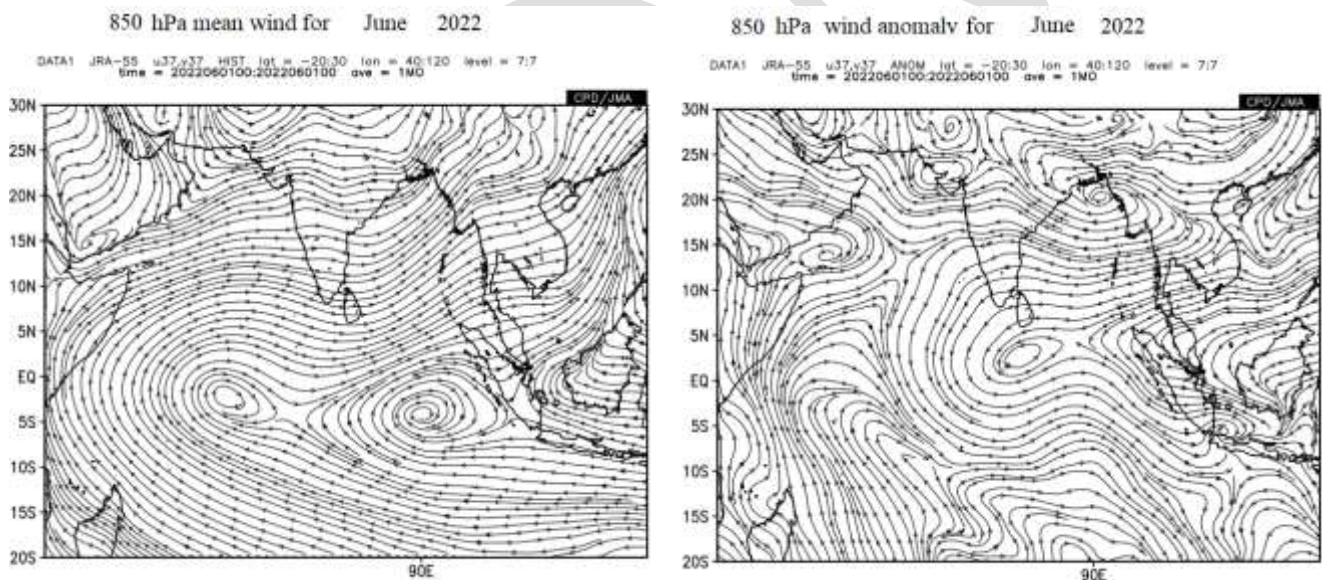


Fig. 7 : Monthly average wind pattern at 850hpa level during the month of June 2022 (JRA55)

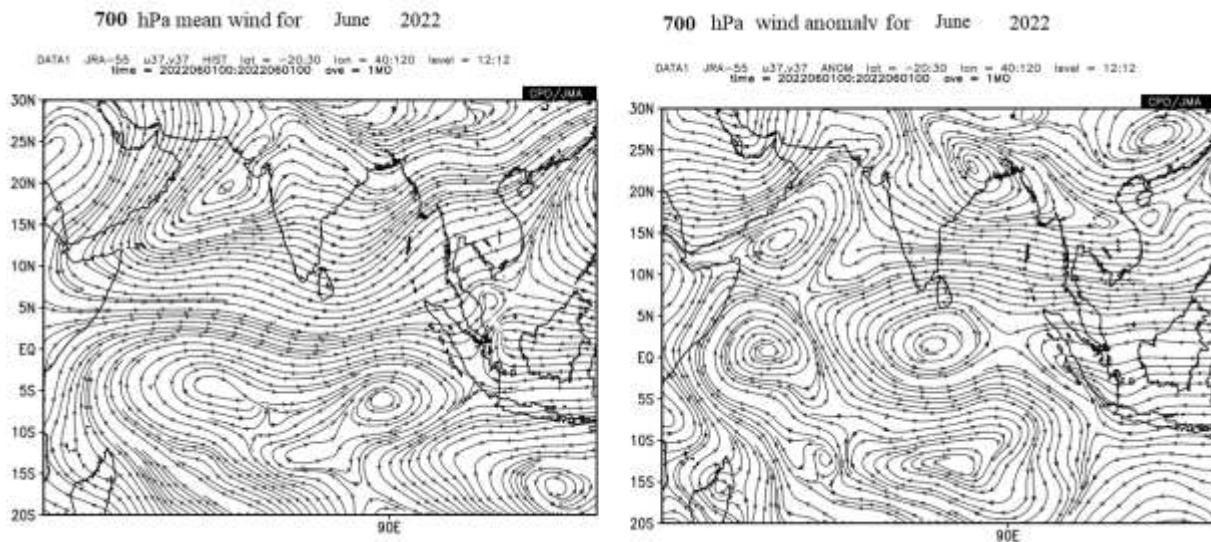


Fig. 8 Monthly average wind pattern at 700hpa level during the month of June 2022 (JRA55)

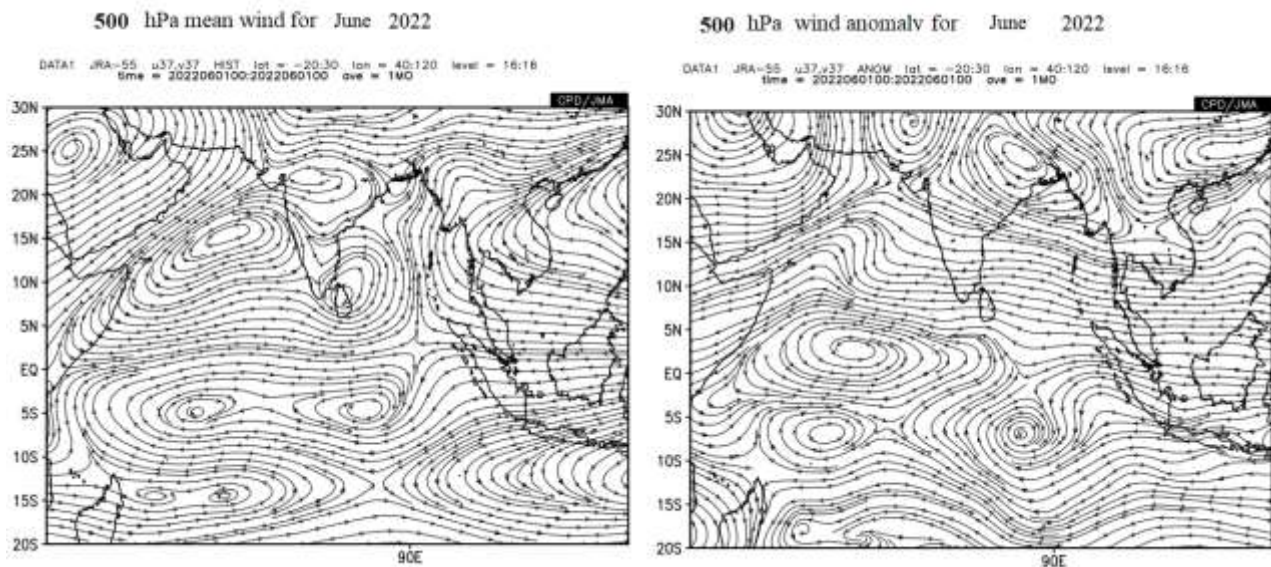


Fig. 9 Monthly average wind pattern at 500hpa level during the month of June 2022 (JRA55)

Temperature Field:

The maximum temperatures in the day were mostly above normal in most places during the month of June 2022. However some stations reported below average maximum temperatures 16th and 17th. (Fig.10). Highest recorded maximum temperature for the month of June 2022 was 37.5^oC at Batticoloa on 25th (Table4a).

Night minimum temperatures over most parts were above normal during the month (Fig 11). However Trincomalee experienced below average minimum temperatures during most of the month. Lowest

recorded minimum temperature for the month of June 2022 was 12.8⁰C at NuwaraEliya on 23rd (Table 4b).

Maximum and Minimum departures from normal day/night temperature were shown in table 4.

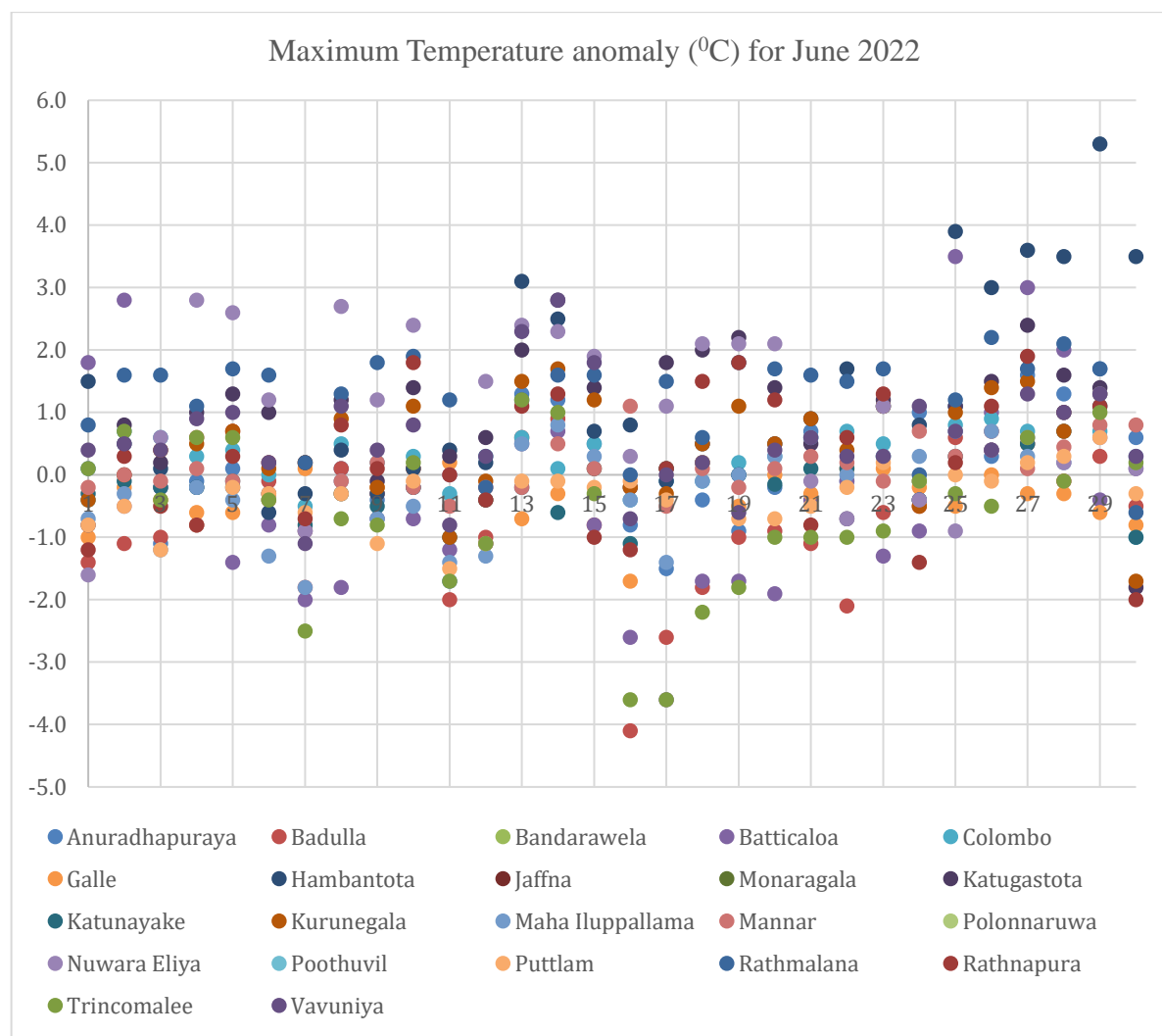


Fig 10 Maximum Temperature anomaly (°C) for June 2022

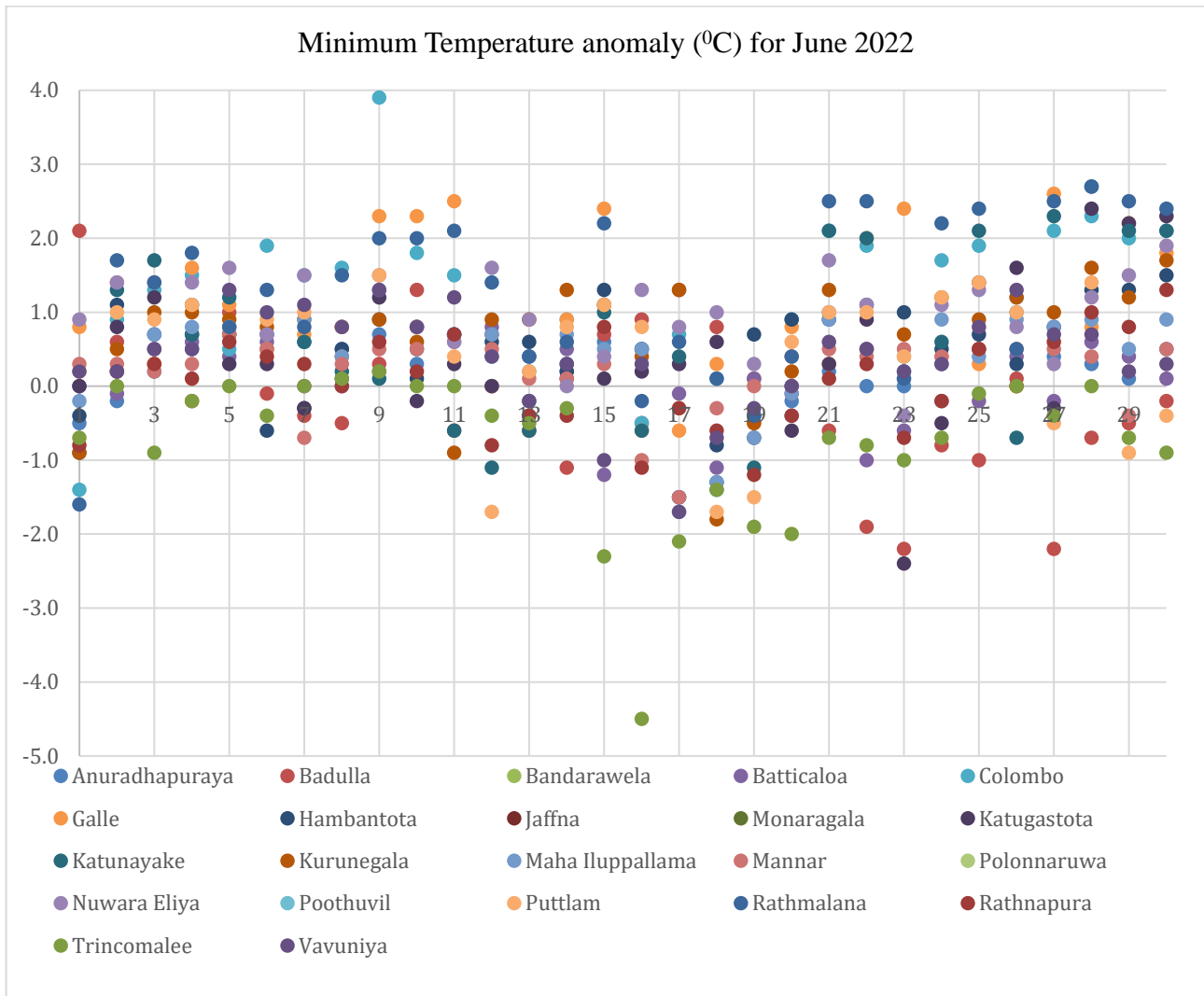


Fig 11 Minimum Temperature anomaly (°C) for June 2022

Below normal rainfall was reported from most of the principal meteorological stations except Anuradhapura, Polonnaruwa, Vavuniya, Trincomalee Pottuwil, Badulla, and Bandarawela, stations located at northcentral and eastern parts where above normal rainfall was reported (Fig 1A).

Maximum percentage of rainfall (790.9%) as well as rainy days (500%) was reported from Polonnaruwa while minimum from percentage of rainfall (0%) as well as rainy days (0%) was reported from Mannar station (Table 3). Number of rainy days was about or above average except Mannar, Katugastota, Nuwara Eliya and MahaIluppallama (Fig 1B).

Highest cumulative rainfall was 598.7 mm at Wevalthalava. Highest rainfall received during 24hours, was 98.4 mm at Guruluwana on 15th June.

All of the hydro catchment stations reported below normal rainfall. (Fig 2).

The monthly total rainfall and the number of rain days at the principal meteorological stations, total rainfall at hydro catchment areas, are shown in tables 2, and 3.

Table-03- total rainfall and the number of rain days at the principal meteorological stations recorded in the month against the respective averages (1961-1990).

Meteorological station	Monthly Total rainfall(mm)			Monthly Total No of rainy Days		
	2022-June	Average	%	2022-June	Average	%
Anuradhapuraya	13.7	9.4	146.0%	2	2	100.0%
Badulla	53.5	29.3	182.4%	8	4	200.0%
Bandarawela	95.3	36.6	260.5%	7	4	175.0%
Batticaloa	5.3	23.9	22.2%	4	2	200.0%
Colombo	91.0	184.9	49.2%	18	16	112.5%
Galle	192.7	188.2	102.4%	21	17	123.5%
Hambantota	41.7	59.0	70.7%	6	6	100.0%
Jaffna	5.3	16.1	33.0%	3	1	300.0%
Monaragala	40.6			6		
Katugastota	19.6	131.9	14.8%	9	15	60.0%
Katunayake	66.3	177.2	37.4%	18	15	120.0%
Kurunegala	67.5	153.0	44.1%	14	14	100.0%
Maha Iluppallama	2.1	14.0	15.3%	2	3	66.7%
Mannar	0.0	4.6	0.4%	0	1	0.0%
Polonnaruwa	78.3	9.9	790.9%	5	1	500.0%
Nuwara Eliya	47.4	171.9	27.6%	11	16	68.8%
Pothuvil	39.6	5.2	761.5%	5	na	
Puttlam	36.1	44.7	80.6%	6	4	150.0%
Rathmalana	54.5	198.4	27.5%	19	16	118.8%
Rathnapura	231.9	412.2	56.3%	22	21	104.8%
Trincomalee	96.3	25.4	379.2%	4	2	200.0%
Vavuniya	86.1	11.2	768.8%	5	1	500.0%
Mattala	61.4			2		

Table-02-Monthly Total Rainfall (mm) with 30 years (1961-1990) of their averages at Hydro catchment areas

Hydro Catchment	June2022	Average	% (percentage of average)
Castlereigh	167.3	630.9	26.5%
Norton	353.3	866.3	40.8%
Maussakele	163.3	530.1	30.8%
Canyon	234.0	711.4	32.9%
Laksapana	302.8	787.8	38.4%
Kotmale	67.5	344.3	19.6%
Victoriya	3.5	46.4	7.5%
Randenigala	4.3	12.5	34.4%
Bowatenna	0.0	33.8	0.0%
Ukuwela	66.6	141.0	47.2%
Samanala Wewa	18.0	714.7	2.5%
Maskeliya	68.2	327.7	20.8%
Neboda		376.7	

Note that the meteorological day in this text is reckoned as the 24hr period from 08.30hrs to 08.30hrs following day

Table 4(a) - Extremes of Maximum Temperatures June 2022					
	Maximum		Offsets		Highest Std.Div
	Value		(-)	(+)	
Value	37.5°C		4.1	5.3	1.78
Station	Batticaloa		Badulla	Hambantota	Batticaloa
Date	25/06/2022		16/06/2022	29/06/2022	
Table 4(b) -Extremes of Minimum Temperature June 2022					
	Minimum		Offsets		Highest Std.Div
	Value		(-)	(+)	
Value	12.8°C		4.5	3.9	1.37
Station	NuwaraEliya		Trincomalee	Colombo	Polonnaruwa
Date	23/06/2022		16/06/2022	09-06-2022	

Prepared by National Meteorological Centre (NMC)
Department of Meteorology