

Weather Synopsis –August 2021

Above normal rainfall was reported at most of the principal meteorological stations except Galle, Jaffna, Kurunegala, Mahalluppallama, Mannar, Puttlam, Trincomalee and Nuwara Eliya (Fig 4).

Most of the hydro catchment stations located along western slopes of the central hills reported above normal rainfall. However the Victoria, Bowathenna, and Samanalawewa hydro catchment station reported below normal rainfall (Fig 6).

Highest cumulative rainfall was 800.6 mm at Guruluwana. Highest rainfall received during 24hours, was 202.7mm at Norton on 12th August .

Except for a few showers in the Southwestern parts , mainly fair weather reported during the first week of the month. Showery conditions enhanced over southwestern parts during the second and fourth weeks of the months. Isolated evening thunderstorms were also reported in eastern, northeastern parts during the second and third weeks.

Formation of multiple thunderstorms over the western slopes of the central hills on 12th (table 1) with passing of a jet streak across Sri Lanka at surface and 850mb layer (Fig 2) caused flash floods in Kegalle and Kandy districts. According to the Disaster Management Centre (DMC) heavy rainfall affected about 2059 people.

Table 1 stations received above 100mm rainfall on August 12, 2021.	
Rain gauge Station	24 hour Rainfall (mm) received on 12 th August
Norton	202.7
Laksapana	168.0
Weweltalawa	160.3
Handessa	152.9
Canyon	146.0
Kotmalee	121.5
Watawala	104.7

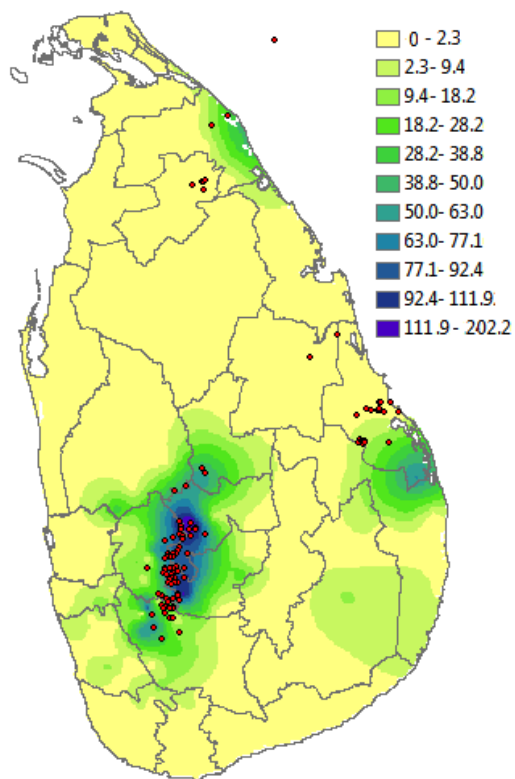


Fig 1: Accumulated rainfall (mm) from 0830am 12th to 0830am 13th August 2021

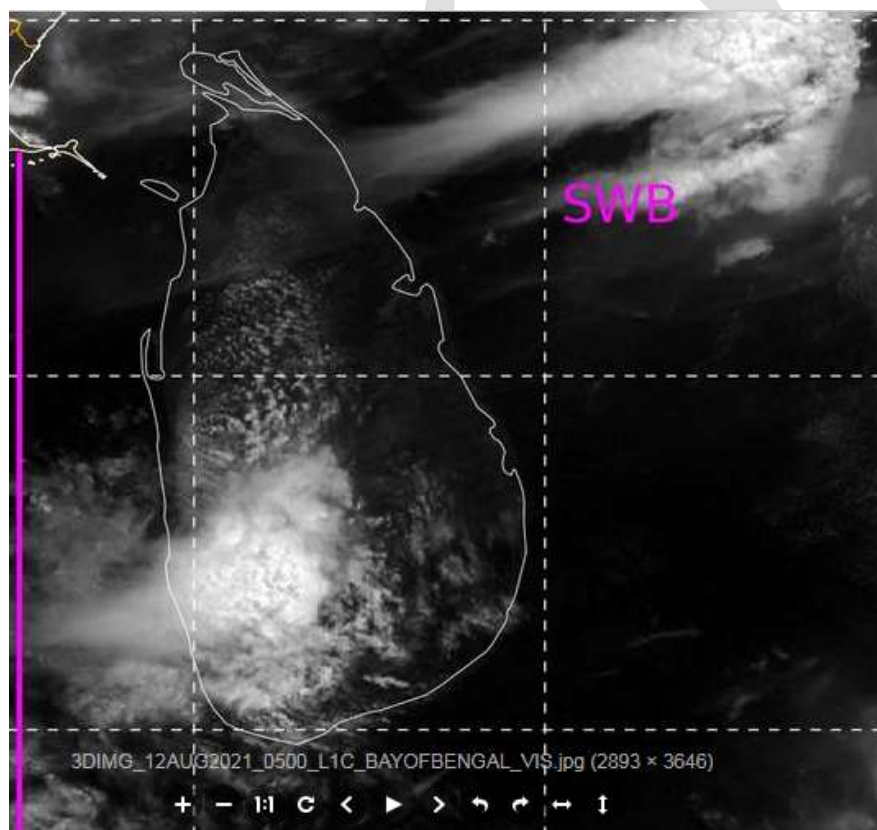


Fig 2 : INSAT Visible image at 0500 UTC on 12th August 2021

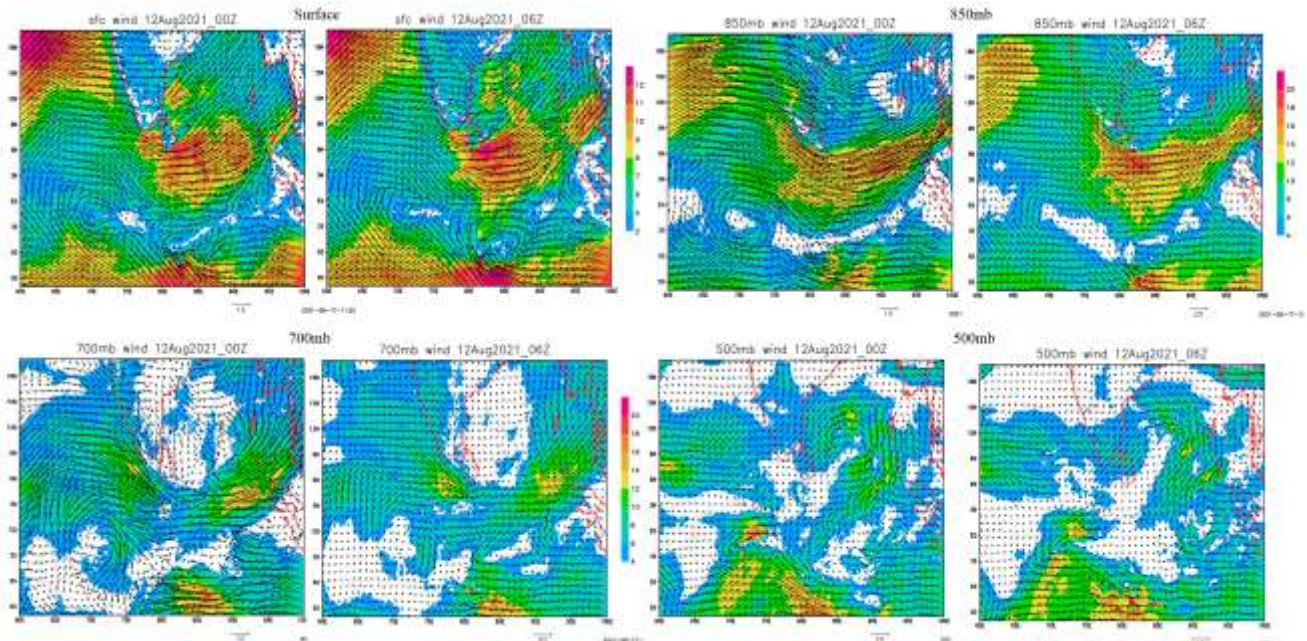


Fig 3: 6 hourly ECMWF 10m wind , 850 mb wind , 700 mb wind and 500 mb wind from 00z 12th August and 06z 12 August 2021.

Mostly above normal day temperature and night temperatures were experienced during the month of August 2021. Highest recorded maximum temperature was 36.5°C at Trincomalee on 04th while the lowest recorded minimum temperature was 11.7°C at NuwaraEliya on 24th

ENSO neutral conditions were observed during Month of August 2021. Ocean Nino Index is -0.4 during June ,July and August (NOAA Climate prediction Center). Slightly negative IOD was observed during August 2021 (BoM, Australia). Sea surface waters in tropical Indian Ocean are warmer than average (Fig. 8)

The average position of the shear line was laid about the Equator from 40°E to 120°E (Fig 7). It was fluctuated about 02-03° north and south of average position.

MJO was in phase 8 during first 3 days with strong signal but weakened at phase 1 during from 04th to 07th . Strong Madden-Julian Oscillation (MJO) was at phase 2 during last three weeks of August except from 21st to 25th when weak MJO signal was apparent at phase 2 (Fig.9).

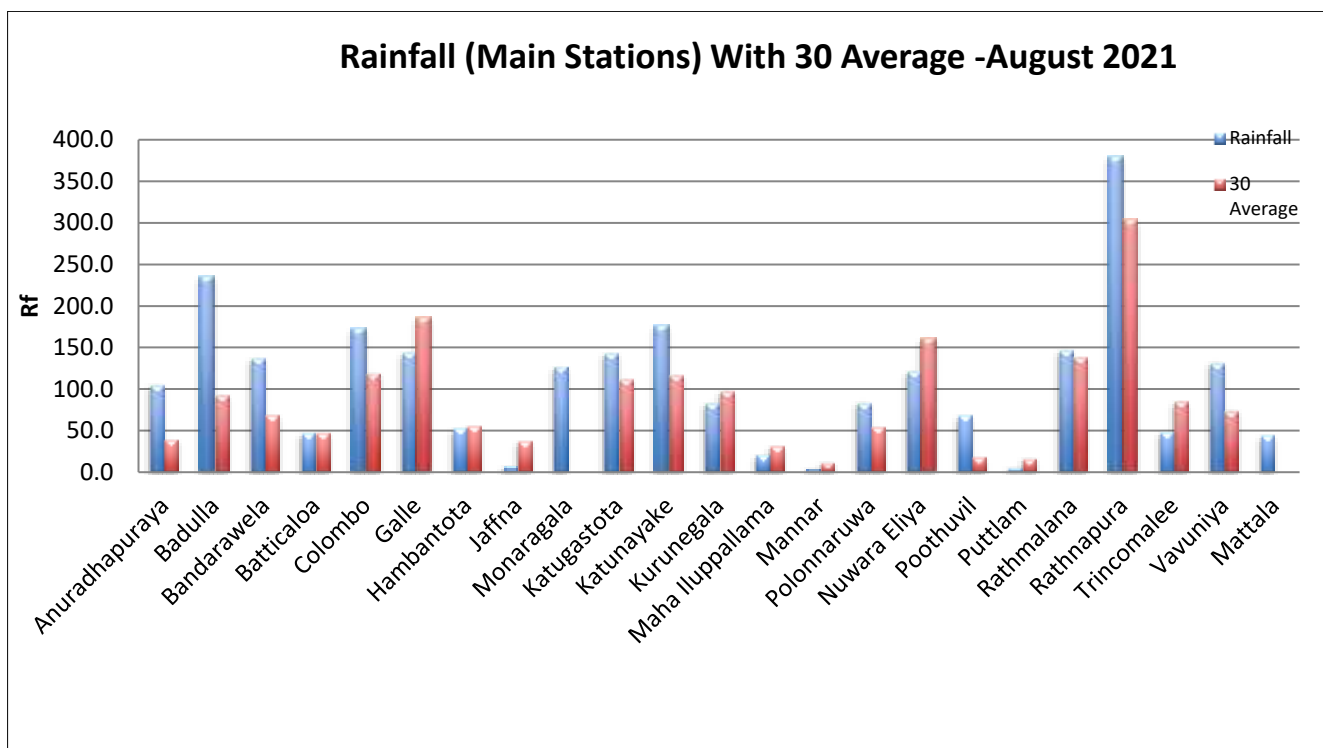


Fig 4: Monthly Total Rainfall(mm) with 30 years (1961-1990) of their averages at Main Meteorological stations areas during August 2021

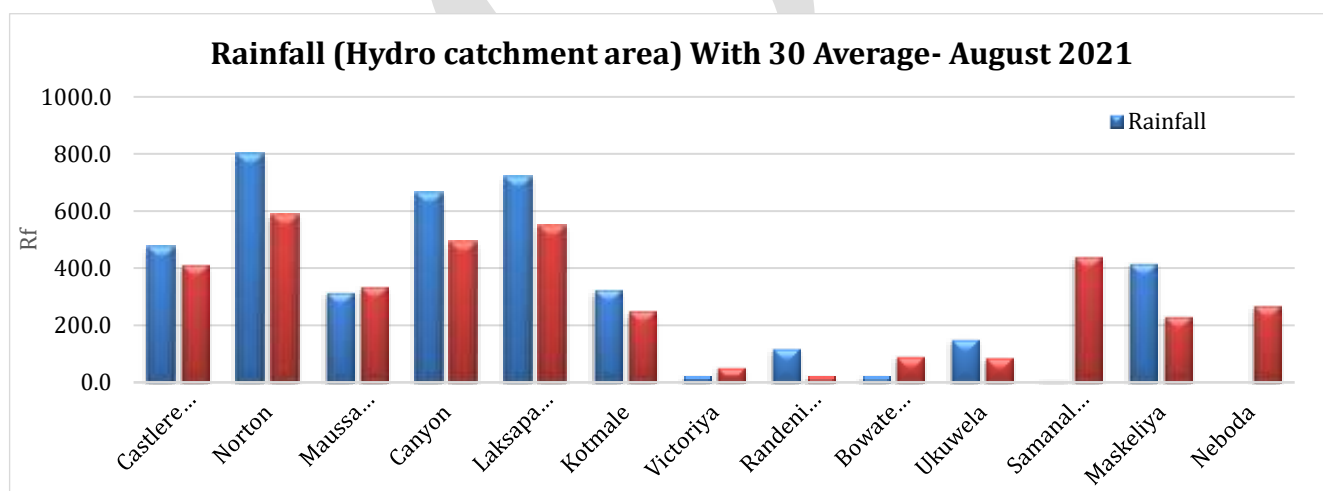


Fig 5: Monthly Total Rainfall(mm) with 30 years (1961-1990) of their averages at Hydro catchment areas during August 2021

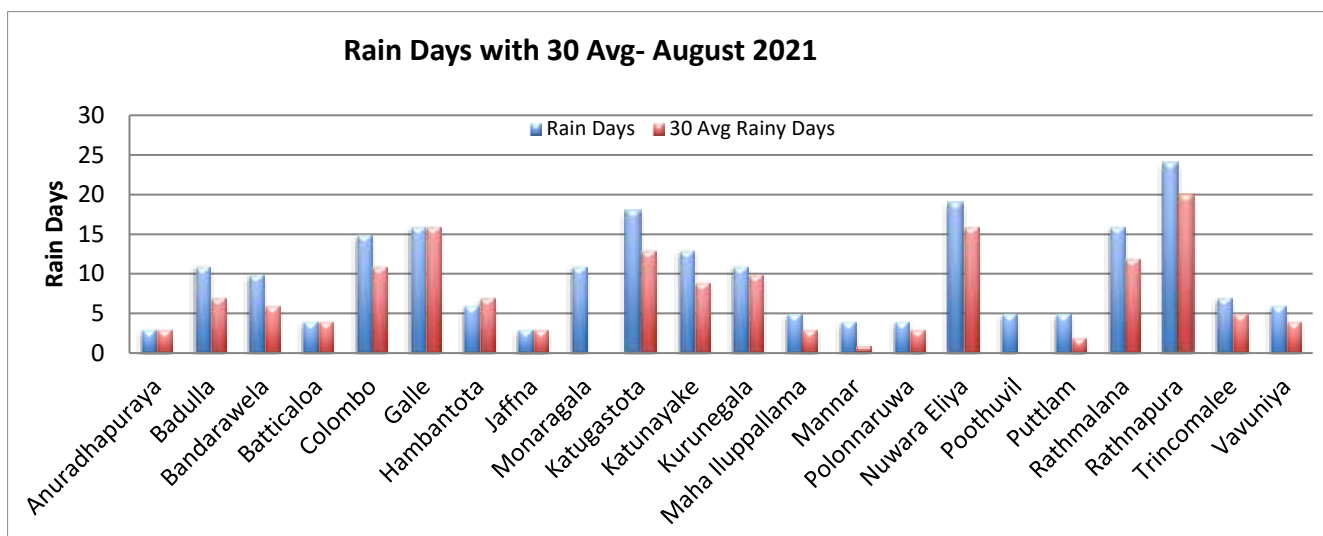


Fig 6: monthly total no of rainy days with 30 years (1961-1990) of their averages at main Meteorological stations during August 2021

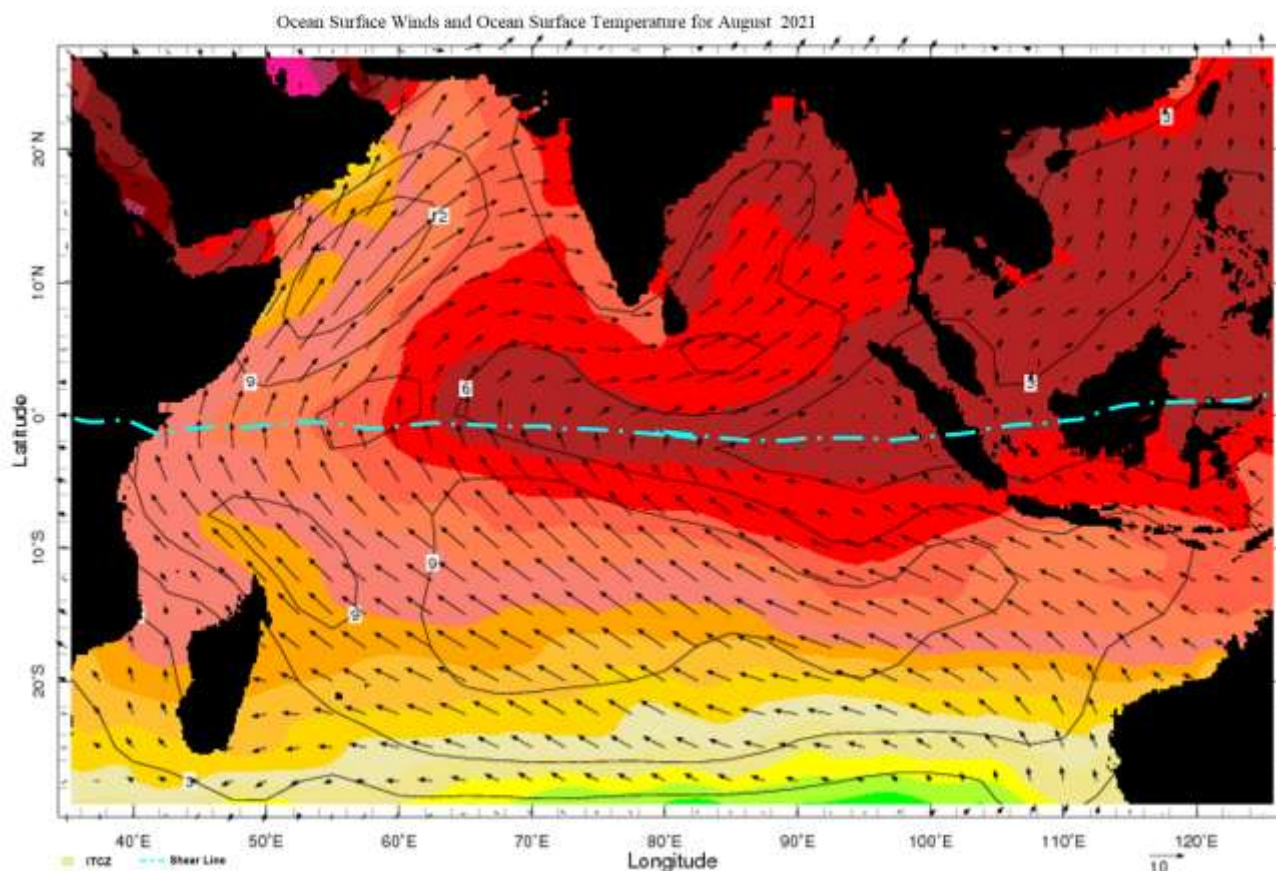


Fig 7: Ocean Surface Winds and Ocean Surface Temperature for August 2021

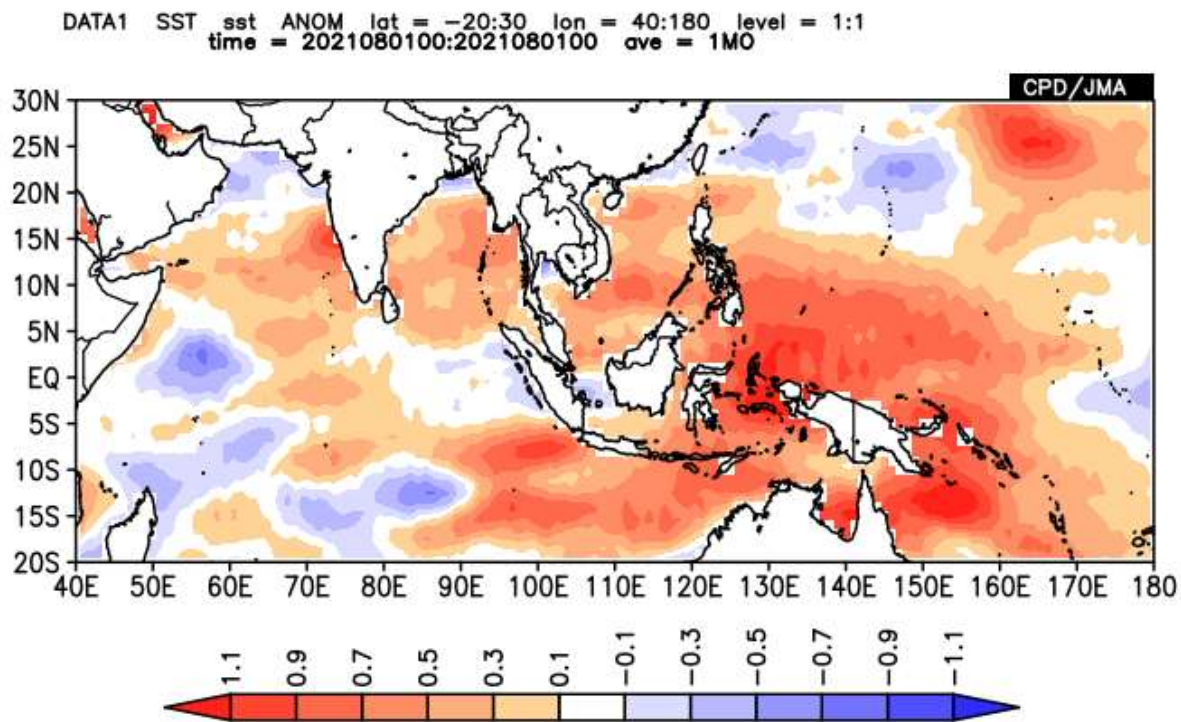


Fig 8: Sea Surface Temperature anomalies for August 2021

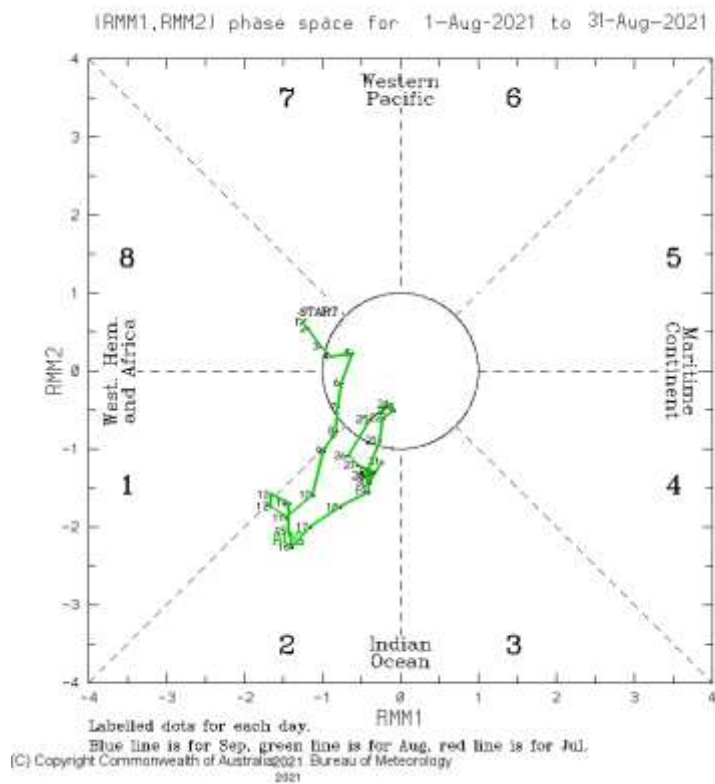


Fig 9: Phase diagram of MJO Index

Surface pressure and winds: The surface pressure was about or above average except from 14th to 15th, from 19th to 21st and from 26th to 31st when it was below average. Southwesterly pressure gradient was mild on 15th, 19th, 21st, from 24th to 25th, and from 30th to 31st; moderate on 04th, 06th, 07th, 09th, from 11th to 13th, from 16th to 18th, on 20th, on 26th, on 29th; steep from 01st to 03rd, on 05th, on 08th, on 10th, on 14th, from 27th to 28th. Pressure distribution was fairly even from 22nd to 23rd.

The surface wind was from westerly to Southwesterly direction and speed varied within 05-15kts.

Upper winds:

At 850hPa, Westerly wind flow is dominated over the island. Anomalous northwest southeast oriented trough appeared over southern part of Sri Lanka (Fig 10).

At 700 hPa, Westerly wind flow is dominated over the island. Anomalous north south oriented trough appeared to the east Sri Lanka (Fig 11)

At 500 hPa, Westerly wind flow is dominated over the island. Anomalous northeast southwest oriented trough appeared over Sri Lanka (Fig 12).

The 200 hpa the upper tropospheric ridge was laid from 28°N40°E to 27°N100°E . Tropical easterly jet was appeared in the vicinity of Sri Lanka.

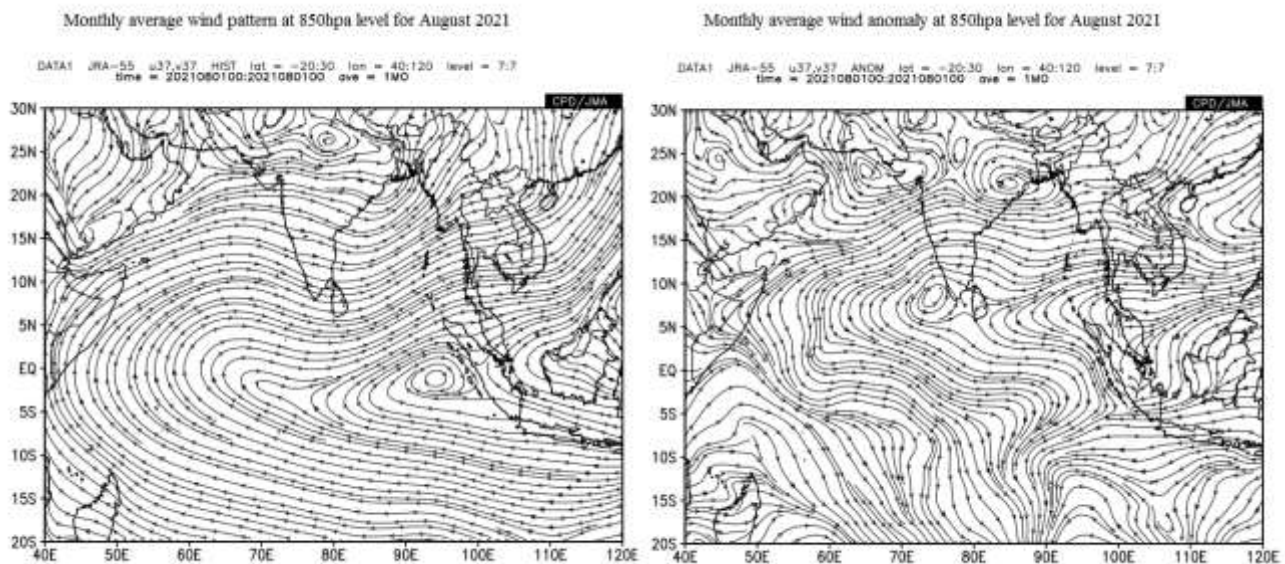


Fig. 10 Monthly average wind pattern at 850hpa level during the month of August 2021 (JRA55)

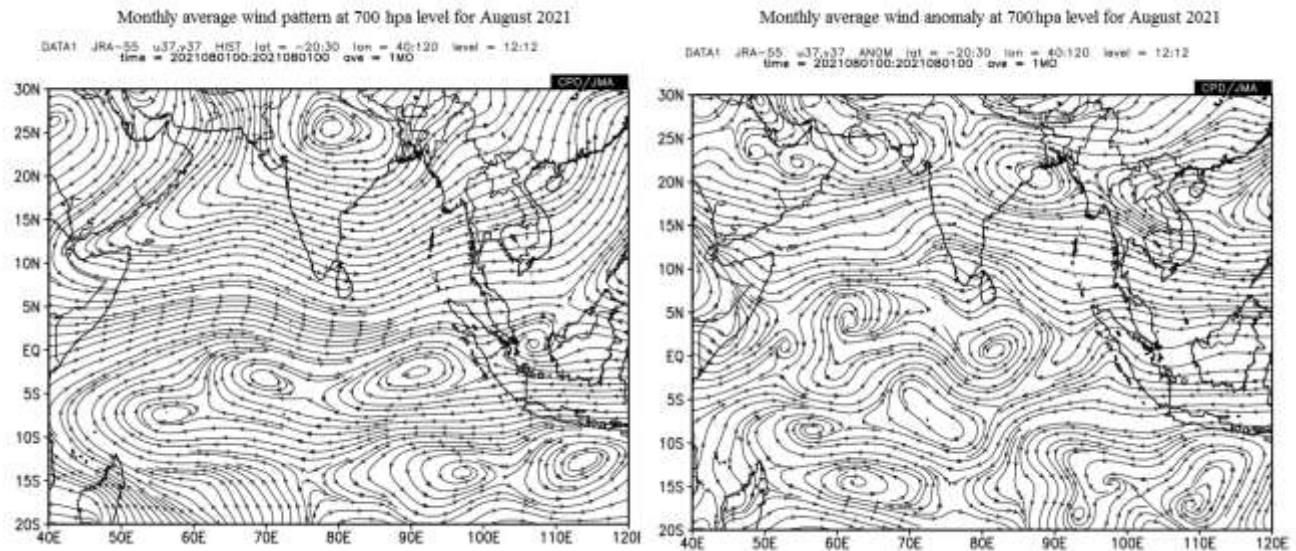


Fig. 11 Monthly average wind pattern at 700hpa level during the month of August 2021 (JRA55)

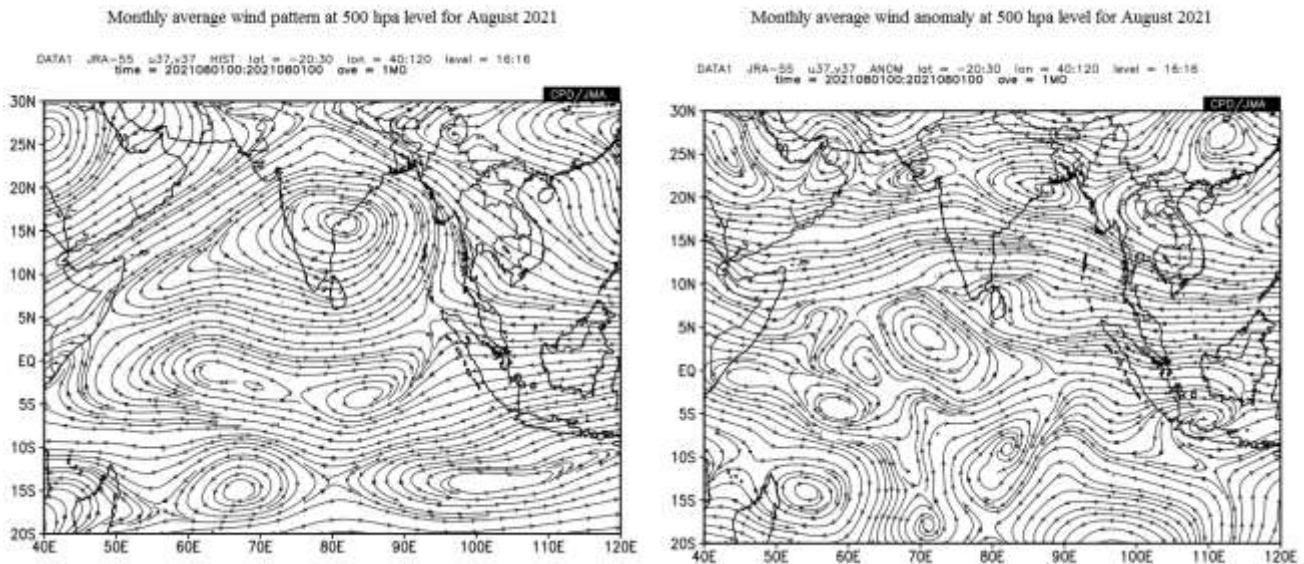


Fig. 12 Monthly average wind pattern at 500hpa level during the month of August 2021 (JRA55)

Temperature Field:

Above normal maximum temperatures were experienced in most places during the month of August 2021. The maximum temperatures in the day were mostly 2-5⁰C above normal in Hambantota during most of days of the month of August 2021. Below average maximum temperatures were reported during most of the days at Badulla (Fig. 13).

Highest recorded maximum temperature for the month of August 2021 was 36.5⁰C at Trincomalee on 05th (Table4a).

Night minimum temperatures over most parts were above normal during the month (Fig 14). However, some stations reported below average minimum temperatures from 20th to 27th. Below average minimum temperatures were experienced from at Badulla during the first and last week of the month. Lowest recorded minimum temperature for the month of August 2021 was 11.7⁰C at NuwaraEliya on 24th (Table 4b).

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

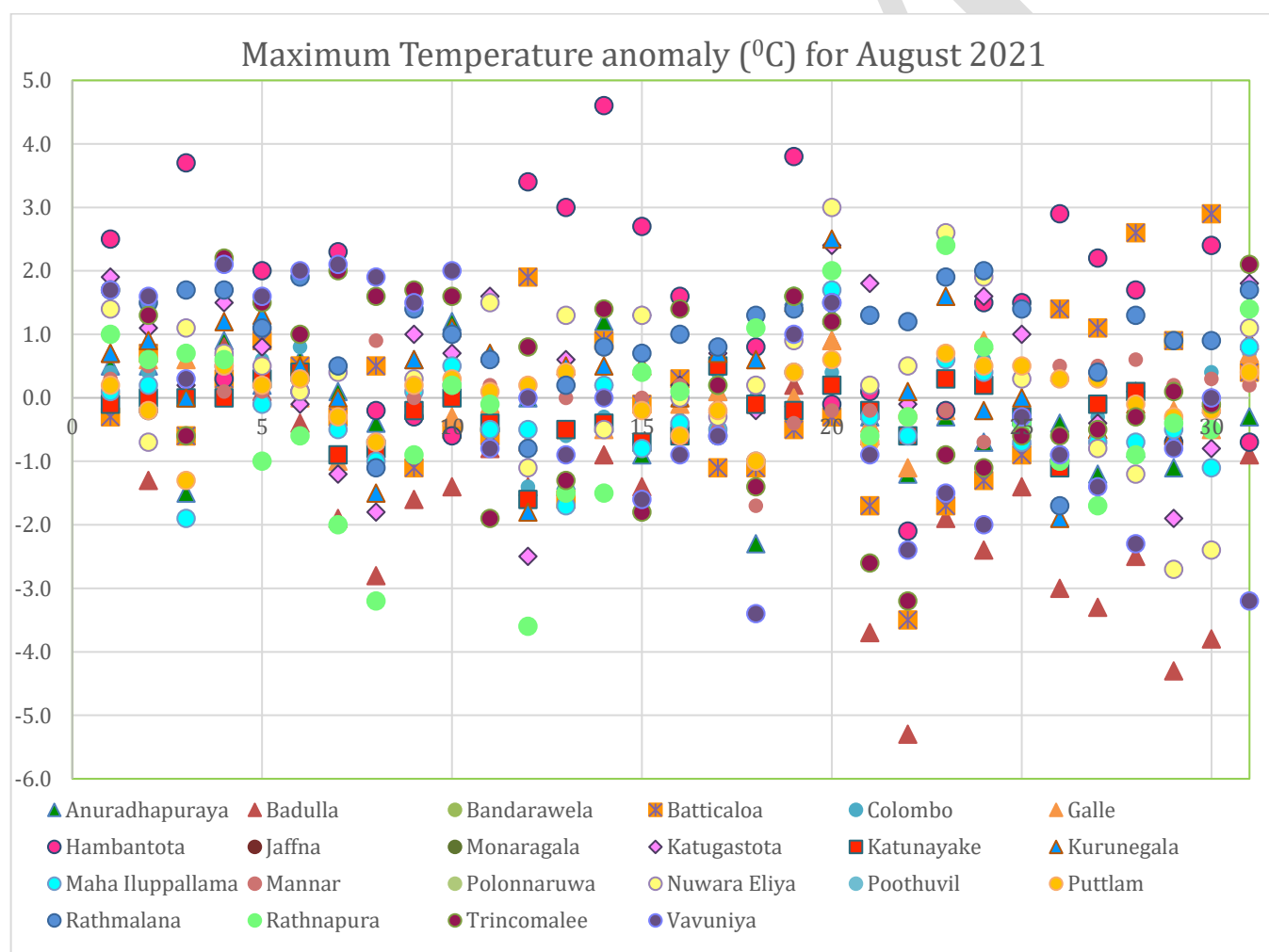


Fig 13 Maximum Temperature anomaly (⁰C) for August 2021

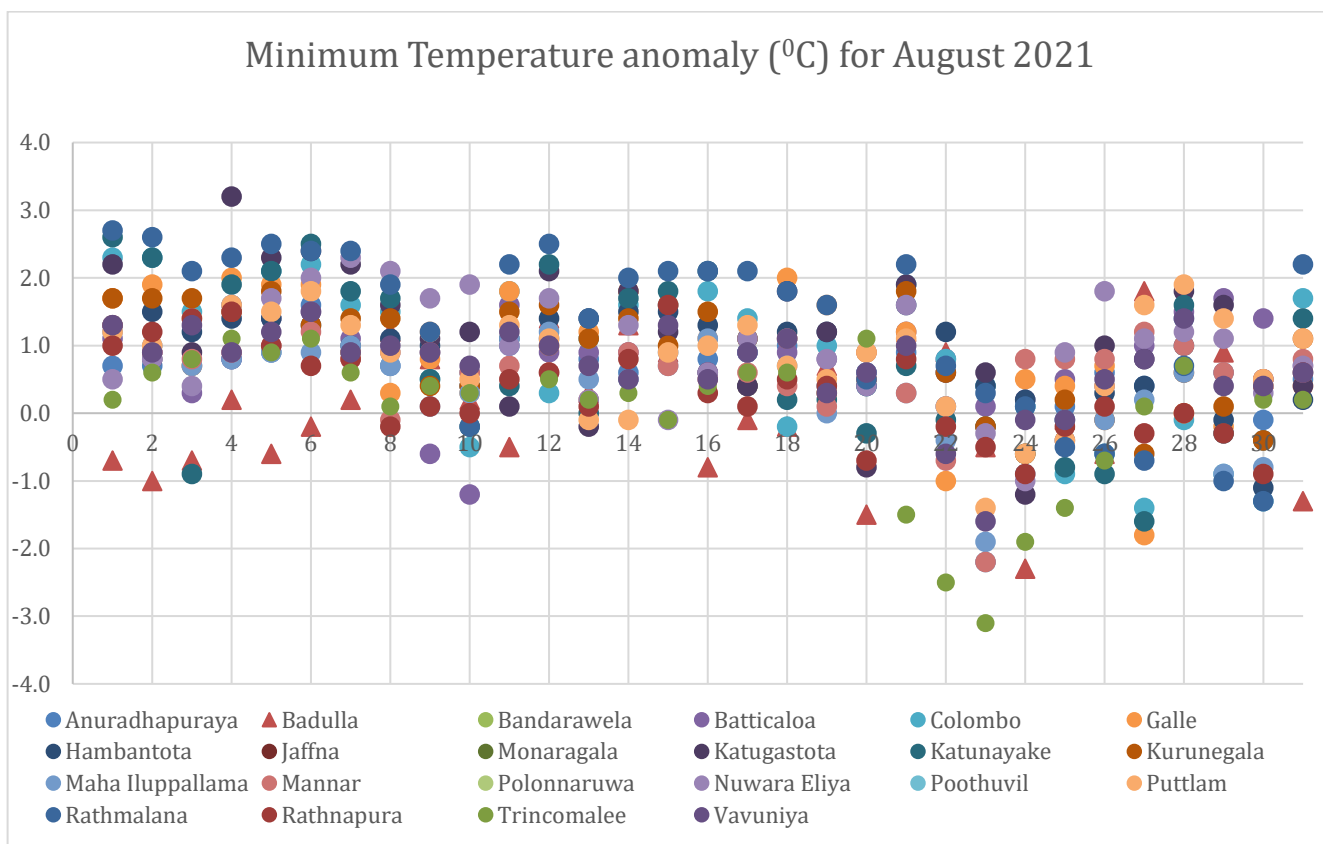


Fig 14 Minimum Temperature anomaly ($^{\circ}\text{C}$) for August 2021

Above normal rainfall was reported at most of the principal meteorological stations except Galle, Jaffna, Kurunegala, MahaIluppallama, Mannar, Puttlam, Trincomalee and Nuwara Eliya (Fig 4).

Maximum percentage was reported from Anuradhapura (266.8%) while minimum from Jaffna station (21.4%)(Table 3). Number of rainy days was above average except Hambantota (85.7%) (Fig 6) (Table 3). Highest cumulative rainfall was 800.6 mm at Guruluwana. Highest rainfall received during 24hours, was 202.7mm at Norton on 12th August .

Most of the hydro catchment stations located along western slopes of the central hills reported above normal rainfall. However the Victoria, Bowathenna, and Samanalawewa hydro catchment station reported below normal rainfall. SamanalaWewa hydro catchment reported significantly below normal rainfall (1.8%) (Fig 5).

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

Hydro Catchment	August 2021	Average	% (percentage of average)
Castlereigh	478.5	413.0	115.9%
Norton	800.6	588.9	136.0%
Maussakele	317.4	336.4	94.4%
Canyon	665.7	493.2	135.0%
Laksapana	719.8	551.7	130.5%
Kotmale	324.2	251.0	129.2%
Victoriya	25.5	53.7	47.5%
Randenigala	119.5	24.5	487.5%
Bowatenna	24.5	93.0	26.3%
Ukuwela	152.6	88.2	173.0%
SamanalaWewa	8.0	440.0	1.8%
Maskeliya	418.8	232.5	180.1%
Neboda		269.5	

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

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		
	2021-August	Average	%	2021-August	Average	%
Anuradhapuraya	106.2	39.8	266.8%	3	3	100.0%
Badulla	235.7	93.2	252.9%	11	7	157.1%
Bandarawela	137.9	69.3	199.0%	10	6	166.7%
Batticaloa	48.2	48.5	99.4%	4	4	100.0%
Colombo	173.4	119.5	145.1%	15	11	136.4%
Galle	145.1	185.9	78.1%	16	16	100.0%
Hambantota	53.9	56.3	95.7%	6	7	85.7%
Jaffna	8.3	38.7	21.4%	3	3	100.0%
Monaragala	127.0			11		
Katugastota	144.5	112.8	128.1%	18	13	138.5%
Katunayake	176.5	117.6	150.1%	13	9	144.4%
Kurunegala	84.0	98.0	85.7%	11	10	110.0%
MahaIluppallama	21.7	32.0	67.8%	5	3	166.7%
Mannar	5.4	12.3	43.9%	4	1	400.0%
Polonnaruwa	84.2	55.1	152.8%	4	3	133.3%
Nuwara Eliya	122.5	161.0	76.1%	19	16	118.8%
Poothuvil	69.2	18.9	366.1%	5	Na	
Puttlam	6.0	17.1	35.1%	5	2	250.0%
Rathmalana	147.8	139.3	106.1%	16	12	133.3%
Rathnapura	380.1	304.1	125.0%	24	20	120.0%
Trincomalee	48.7	85.9	56.7%	7	5	140.0%
Vavuniya	132.5	75.0	176.7%	6	4	150.0%
Mattala	45.3			6		

Table 4(a) - Extremes of Maximum Temperatures				August	2021
	Maximum			Highest Std.Div	
	Value	Offsets			
		(-)	(+)		
Value	36.5 ⁰ C	5.3	4.6	1.67	
Station	Trincomalee	Badulla	Hambanthota	Hambanthota	
Date	04/08	22/08	14/08		
Table 4(b) -Extremes of Minimum Temperature August 2021					
	Minimum			Highest Std.Div	
	Value	Offsets			
		(-)	(+)		
Value	11.7 ⁰ C	3.1	3.2	1.45	
Station	NuwaraEliya	Trincomalee	Katugastota	Polonnaruwa	
Date	24/08	23/08	04/08		

Prepared by National Meteorological Centre (NMC)
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