



Government of Nepal
Ministry of Population and Environment
Department of Hydrology and Meteorology
Nagpokhari, Kathmandu, Nepal

PRELIMINARY WEATHER SUMMARY OF NEPAL

August 2017

MAIN HIGHLIGHT

Most parts of the country recorded above normal temperature. Southern parts (Tarai) of the country received above normal rain whereas most of the hilly and mountainous regions received normal to below normal rainfall (Fig.2, Fig.4, and Table 2). Nepal's Ministry of Home Affairs (MoHA) reported that 18 districts of the Tarai were affected severely and more than 30 districts of the country suffered damages as a result of heavy rain, flooding or landslides. Over 13,000 families have been affected, with around 1,500 families displaced. The list of damages shows fatalities of 62 people, missing 27 people, injured 36 people, and buildings destroyed 305 buildings from August 10 to August 14, 2017. According to UN figures, the worst hit districts (most families affected) include Bardiya, Banke, Dang, Chitawan, Lalitpur, Makawanpur, Bara, Sarlahi, Mahottari, Sindhuli, Dhanusha, Siraha, Saptari and Panchthar.

SYNOPTIC SEQUENCES

Weather over Nepal was affected by the following systems enhancing the rainfall activities during August 2017.

Monsoon Trough

During monsoon season, position of the monsoon trough plays an important role in the contribution of rainfall. In general, if it shifts north of its normal position towards foothills of the Himalayas, Nepal gets significant amount of rainfall and when it moves to the south, monsoon break period occurs resulting in less or no rainfall. The axis of monsoon trough as usual oscillated north and south of its normal position during this month.

Monsoon trough ran close to foothills of the Himalayas till 4th August then moved southwards. From 11th August, it again shifted north of its normal position and ran close to the foothills of the Himalayas, while on 18th it started shifting southwards. Monsoon trough was fluctuating around its normal position from 28th-31st August.

Low Pressure Area (LPA)

First LPA formed over Bay of Bengal on 18th August. It intensified into well marked low and shifted to west Vidarbha while became less marked over Kutch on 22nd of August. Second formed over Odisha and neighborhood on 27th of this month while third LPA formed over Kutch and adjoining areas of south Pakistan on 31st August.

Upper Air Cyclonic Circulation (UACC)

UACC forming over Jharkhand (6th-12th August), Arabian Sea and Kutch (8th-13th August), Madhya Pradesh and neighborhood (10th-13th August), Bihar and neighborhood (12th-16th August) enhanced rainfall activity that caused severe flooding in the Tarai region (11th-13th August).

PRECIPITATION DISTRIBUTION

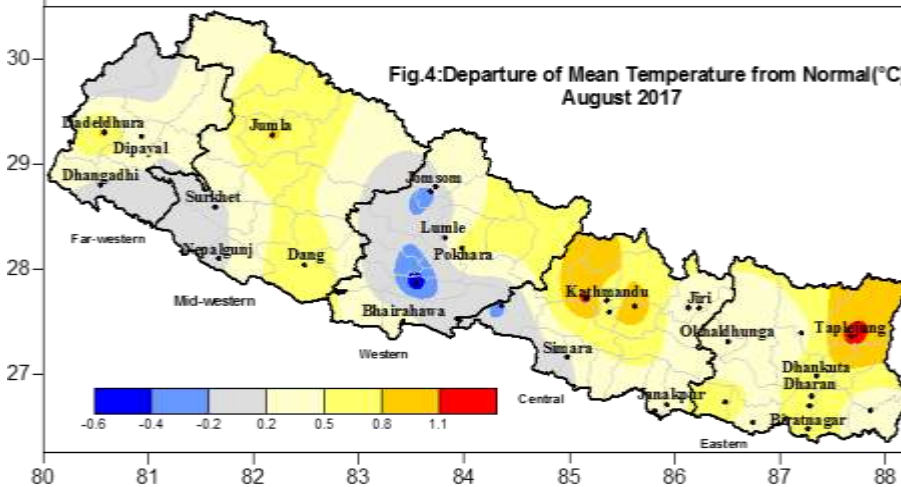
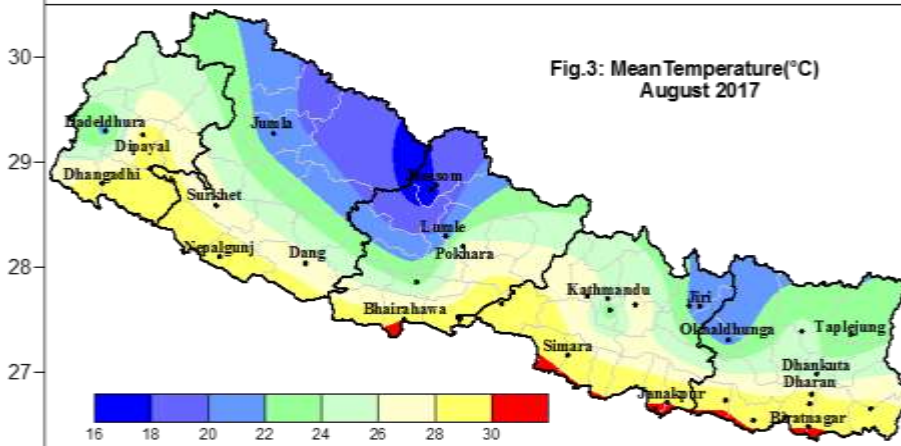
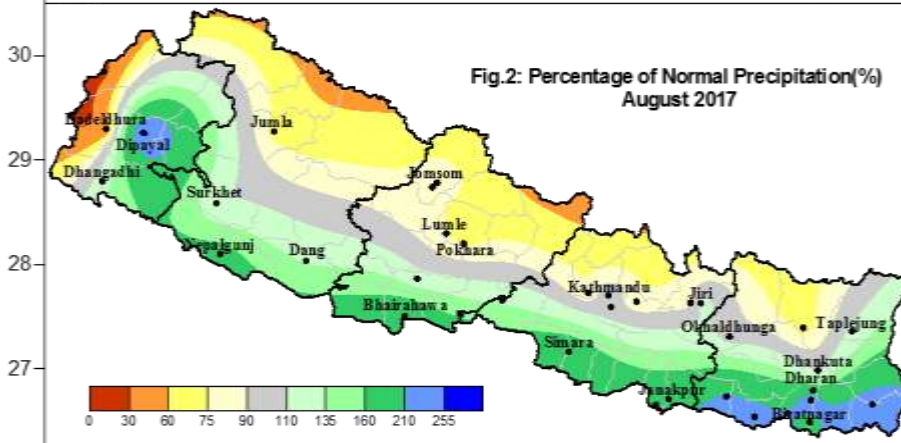
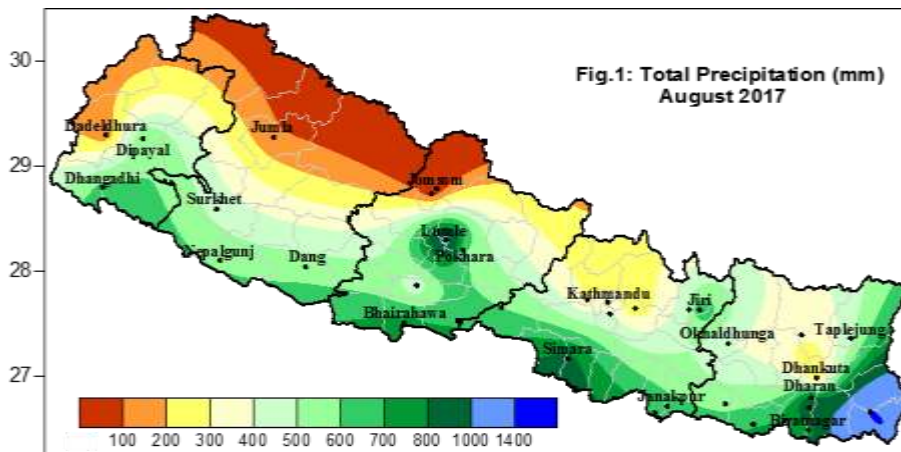
Southern half of the country along with the adjoining northern areas of Eastern Region (ER), Central Region (CR) recorded above normal rainfall. The highest 24 hour rainfall of 376.5mm on 12th August was recorded at Kankai contributing to the highest total rainfall of 1416.5mm (239.2%) while highest percentage of rainfall 264.6% (597.5mm) was recorded at Dipayal. (Figure 1, Table 2). Almost 50% of the total monthly rainfall was received during 2nd week of the month (Table 1).

Table 1: Temporal distribution of average rainfall in August, 2017

Week	Total rainfall (mm) (arithmetic average from station rainfall)	Percentage (%) of monthly total	Daily rainfall Intensity (mm)
1 st	122.7	24.0	17.5
2 nd	248.2	48.6	35.5
3 rd	64.0	12.5	9.1
4 th	58.9	11.5	8.4
Remaining 3 days	16.8	3.3	5.6
Total	510.7	100.0	

TEMPERATURE PATTERN

Most parts of the country recorded above normal temperature. Central parts of WR with adjoining southern CR recorded normal to below normal temperature however adjoining areas of MWR and FWR with north eastern part of FWR recorded normal temperature. (Fig: 4). The mean temperature varied between less than 18.0°C in the northern parts of MWR and adjoining WR to above 30.0°C in southern parts of Tarai Region (Figure 3). As compared to other stations, Tarahara recorded the highest maximum temperature of 38.8°C on 27th August while the lowest minimum temperature of 9.5°C was recorded in Thakmarpha on 29th August 2017. (Table 2).



Remarks: Normal Rainfall (Gray colour) = $100 \pm 10\%$
 Normal Temperature (Gray colour) = $0 \pm 0.2\text{ }^{\circ}\text{C}$

Table: 2
PRELIMINARY MONTHLY WEATHER DATA
August 2017

Stations	PRECIPITATION							TEMPERATURE								
	Total (mm)	% of Normal	No. of Rainy Days				24hrs Extreme Rainfall & Date	Maximum (°C)			Minimum (°C)			Mean (°C)		No. of Days with maximum temperature \geq 30°C
			\geq 1.0 mm	\geq 10.0 mm	\geq 25.0 mm	\geq 50.0 mm		Average Max	Departure from the normal	Highest Max & Date	Average Min	Departure from the normal	Lowest Min & Date	Monthly Mean	Departure from the normal	
DADEL DHURA	125.4	39.7	15	5	0	0	19/22	24.6	0.79	26.4/12	18.1	1.0	15.5/27	21.3	0.9	0
DARCHULA	151.0	22.1	18	8	1	0	35/27	30.0	-1.5	33.4/6	22.5	1.2	21/26	26.2	-0.2	16
DHANGADHI	635.6	122.1	26	19	8	4	91.3/10	32.5	-0.3	35.5/6	26.1	0.6	24.5/24	29.3	0.1	25
DIPAYAL	597.5	264.6	22	14	7	4	156/15	33.5	-0.2	36.5/6	24.4	0.7	21.6/27	28.9	0.2	29
JUMLA	121.3	69.6	20	6	0	0	14/30	25.0	0.4	31.5/8	17	1.3	13/30	20.8	0.8	2
SURKHET	463.2	109.6	22	9	6	1	168/4	30.9	0.4	33.9/6	23.1	-0.2	21.3/24	27.0	0.1	24
NEPALGUNJ AIRPORT	576.2	175.9	17	9	7	4	169/12	33.0	0.0	35.5/8	25.7	0.3	24/15	29.4	0.1	28
GHORAI (DANG)	555.6	131.7	22	11	7	3	157/12	30.5	1.0	35.5/8	23.5	0.7	22/15	27.0	0.8	22
JOMSOM	32.9	88.1	10	0	0	0	7/20	22.6	-0.1	25/7	13.9	0.4	12.2/28	18.3	0.2	0
THAKMARA PHA	47.2	74.3	12	0	0	0	8.7/5	22.2	0.8	24/3	11.5	-1.5	9.5/29	16.9	-0.3	0
TANSEN	420.4	119.8	23	12	7	3	69.5/14	28.3	1.3	32.5/26	18.0	-2.4	16.5/14	23.2	-0.5	10
BHAIRHAWA AIRPORT	767.0	194.0	18	13	9	4	222/14	34.0	0.6	37.5/26	26.1	0.2	23.9/14	30.1	0.4	27
POKHARA AIRPORT	619.8	71.5	25	16	8	5	89/11	30.7	0.5	33.3/6	22.8	0.8	21.4/28	26.8	0.7	24
LUMLE	1098.4	76.2	31	20	16	9	90.2/19	23.3	-0.3	25.5/6	17.9	0.5	16.5/4	20.6	0.1	0
RAMPUR	597.8	131.1	16	13	7	4	210/13	33.0	-0.5	36/26	25.4	0.0	22.4/13	29.2	-0.3	28
SIMARA AIRPORT	844.0	192.2	16	8	6	5	227/12	32.7	0.0	35.5/31	25.8	0.4	24/13	29.3	0.2	27
GODAVARI	421.3	95.1	23	12	4	2	87.9/12	26.5	1.4	28.8/30	18.6	0.2	16.9/29	22.6	0.8	0
KATHMANDU AIRPORT	363.3	109.8	23	12	5	1	55/31	29.2	0.5	31.5/26	20.5	0.5	18.5/26	24.8	0.5	7
PANCHKHAL	226.1	78.7	19	7	4	1	55.5/26	32.9	1.3	35.3/5	23.2	0.8	20.7/26	28.0	1.0	28
DHUNIBESI	289.7	74.4	24	11	3	0	36/7	31.6	1.5	33.4/5	22.5	0.9	21/13	27.1	1.2	29
JIRI	699.8	120.2	28	19	11	2	90.8/5	24.6	0.6	26.1/6	17.2	0.3	14.4/25	20.9	0.5	0
JANAKPUR AIRPORT	640.3	188.6	14	7	5	4	192.4/13	33.0	0.3	36.4/23	27.0	0.6	24.8/13	30.0	0.4	24
KABRE	478.1	84.0	29	15	6	1	85.4/5	25.4	0.5	27.5/26	18.0	-0.3	16/26	21.7	0.1	0
OKHALDHUNGA	400.2	99.2	24	14	4	2	78/26	24.7	0.3	28.4/30	17.8	0.1	16.6/26	21.2	0.2	0
LAHAN	566.7	217.5	20	11	7	4	124.4/12	33.0	0.4	35.5/5	26.2	1.0	23.5/14	29.6	0.7	29
RAJBIRAJ	689.1	227.0	18	9	6	4	207.5/13	32.3	-0.8	35/5	26.8	1.4	23.5/14	29.5	0.3	27
DHANKUTA	187.3	103.8	14	4	3	1	54/11	27.4	0.4	29.8/28	21.0	1.0	19.3/15	24.2	0.7	0
DHARAN	879.8	179.6	20	14	9	5	292.9/12	32.1	-0.1	34.2/23	25.6	1.6	24.3/26	28.8	0.7	25
BIRATNAGAR AIRPORT	734.5	194.1	17	11	6	3	251/13	33.5	1.0	36.5/31	26.4	0.6	24.5/15	30.0	0.8	28
TARAHARA	919.3	238.8	21	11	8	5	261/13	33.0	0.8	38.8/27	25.3	0.2	20/13	29.2	0.5	28
KHADBARI	320.9	69.1	23	10	4	0	48.2/31	28.3	0.2	30.5/4	21.7	0.5	20.9/26	25.0	0.3	5
TAPLEJUNG	477.0	116.9	24	12	7	4	87/31	26.3	1.4	28.4/6	18.7	1.0	17.7/31	22.5	1.2	0
KANKAI	1416.5	239.2	25	16	13	7	376.5/12	32.8	-0.4	36/23	24.8	0.8	22.5/26	28.8	0.2	28

Remarks: -- = Normal not available M = Data not available * = Rainfall station

Rainfall recorded on a day is the total 24 hour rainfall from the previous day 8:45 am till 8:45 am of that day.