



Government of Nepal
Ministry of Energy, Water Resources and Irrigation
Department of Hydrology and Meteorology
Nagpokhari, Kathmandu, Nepal.

PRELIMINARY WEATHER SUMMARY OF NEPAL

September 2018

Note: This weather summary is based on daily data of 38 meteorological stations established by Department of Hydrology and Meteorology.

MAIN HIGHLIGHT

Most parts of the country recorded above normal temperature and below normal rainfall (Fig.2 and Fig.4).

SYNOPTIC SEQUENCES

Weather over Nepal was affected by the following systems enhancing the rainfall activities during September 2018.

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 Himalaya, Nepal generally gets significant rainfall and when it moves to the south, monsoon break period occurs resulting in less or no rainfall.

The monsoon trough remained north of its normal position during the first and second week. It ran close to foot hills of the Himalayas during 12-14th September. Also, second week received highest amount of rainfall compared to other weeks (Table 1). Western part of the monsoon trough continued to run close to the foothills while the eastern part shifted southwards on 15th and 16th. It became less marked on 17th of September.

Low Pressure Area (LPA)

The first system of this month formed as a low pressure area over northwest Bay of Bengal and neighborhood on 5th concentrated into a depression and intensified into deep depression on 6th September. It moved initially westwards and then northwestwards and lay centered Chhattisgarh and neighborhood on 7th. On 8th September it weakened and lay as a well-marked LPA over northwest Madhya Pradesh and neighborhood with the associated cyclonic circulation extending up to 4.5 km above mean sea level. The second system was a cyclonic storm 'DAYE' that formed over northwest Bay of Bengal on 20th September and contributed significant amount of weather during 21st to 26th of this September.

PRECIPITATION DISTRIBUTION

Except for some isolated patches over southern part of the country, almost all parts of the country received below normal rainfall (Fig.2). Among 38 stations, the highest 24 hour rainfall of 207.0mm was recorded on 11th September 2018 at Pokhara while Lumle recorded the highest monthly total rainfall of 723.5mm (81.6% of normal rainfall). Similarly, Dhangadhi received the highest monthly total rainfall above normal in percentage (111.9%, 330.9mm)(Figure 2 and Table 2) .

Similarly, Fig. 5 represents the amount and percentage of accumulated rainfall during monsoon season (June-September) with accumulated normal rainfall. Rainfall was consistently below normal in most of the stations on most of the days from the beginning of monsoon season. Among 38 stations 15 received normal

to above normal rainfall while 23 stations received below normal rainfall. Jaleswore received above normal rainfall throughout the monsoon (123.0%) (1051.4mm) whereas Dhankuta received lowest among these station with (53.4%) (414.1mm) of the rainfall at the end of the monsoon season (Fig 5).

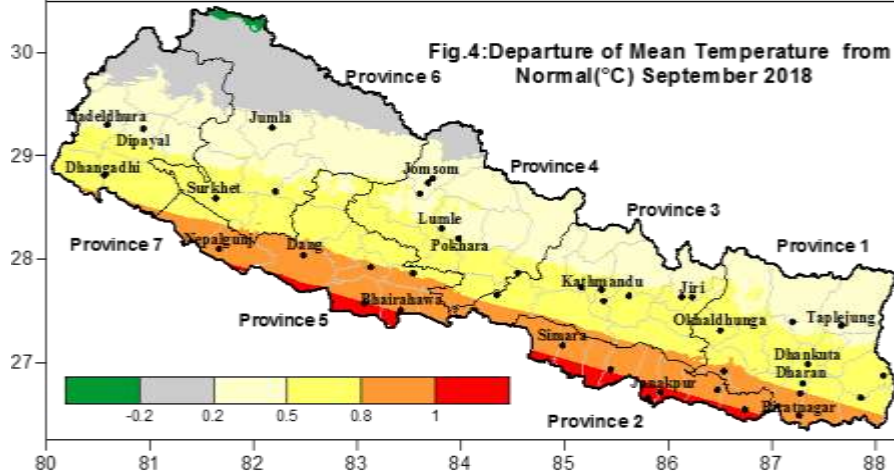
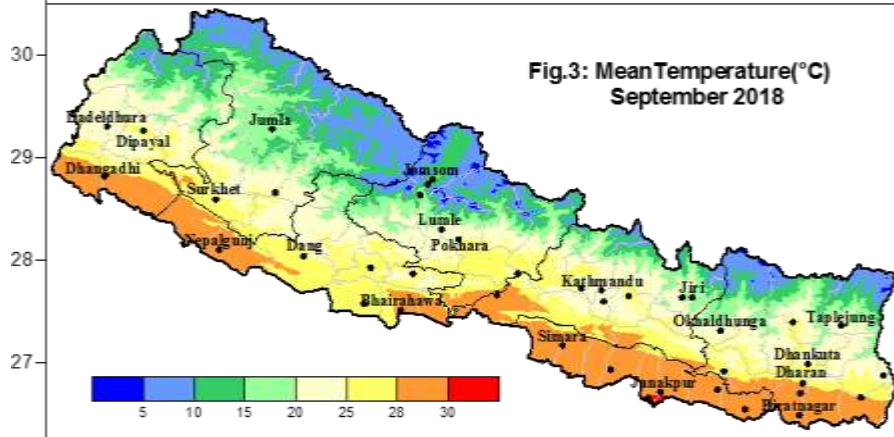
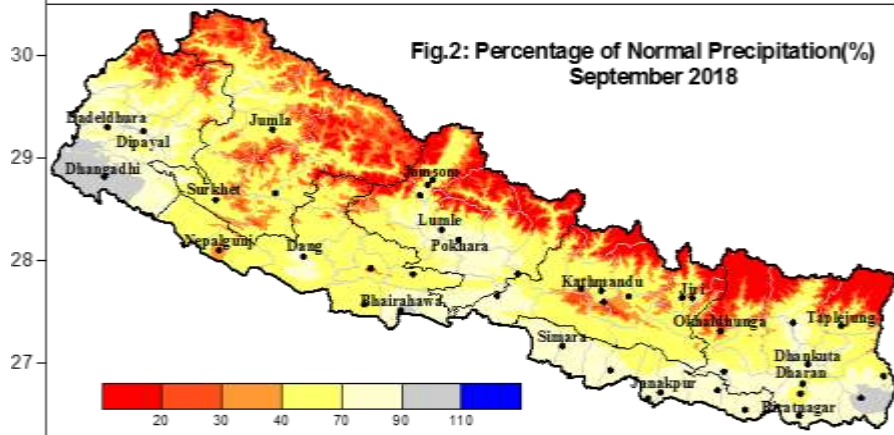
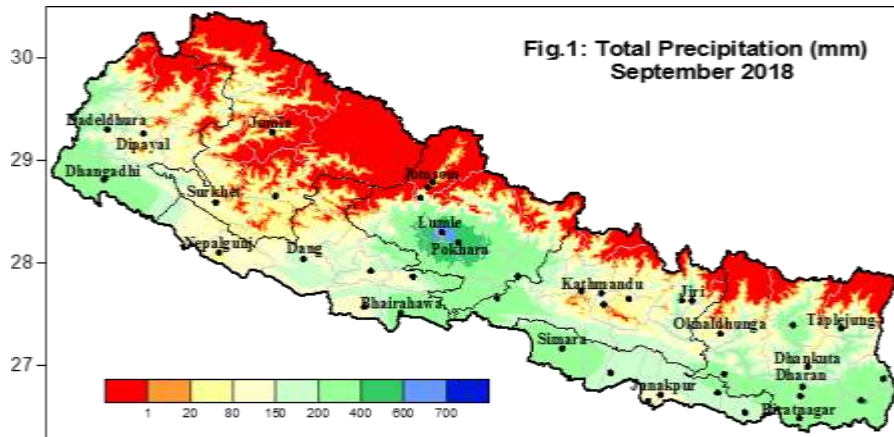
Table 1: Temporal distribution of average rainfall in September, 2018

Week	Total rainfall (mm) (arithmetic average of station rainfall)	Percentage (%) of monthly total	Daily rainfall Intensity (mm)
1 st	57.6	31.1	8.2
2 nd	88.4	47.7	12.6
3 rd	24.0	13.0	3.4
4 th	13.9	7.5	2.0
Remaining 2 days	1.6	0.9	0.8
Total	185.5	100.0	

TEMPERATURE PATTERN

Except for northwestern parts of the country, rest of the country recorded above normal temperature. Regarding mean temperature departure, highest negative anomaly of -1.4°C was recorded in Thakmarpha whereas the highest positive anomaly of 1.6°C was recorded over Nepalgunj (Fig.4, Table 2). Among the 38 stations, the mean temperature varied from below 15.0°C in the northern part of the country to above 30.0°C at pocket area of province 2 (Fig.3). Dipayal recorded the highest maximum temperature of 39.5°C on 22nd September while Thakmarpha recorded the lowest minimum temperature of 3.0°C on 29th September (Table 2).

[The viewers of this site need to consider this difference that due to the interpolation of the data into (1kmx1km) grid to produce the figure listed below there is variability in the real data in the table and the color legends in the figure.]



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
September 2018

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 >30°C
			≥ 1.0 mm	≥ 10.0 mm	≥ 25.0 mm	≥ 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	142.3	72.6	10	4	2	0	41/3	24.3	1.0	26.8/6	16.2	0.7	14.1/21	20.3	0.9	0
DARCHULA	274.7	81.8	18	7	3	1	95.5/11	29.4	-1.6	32.4/9	19.8	0.1	17/17	24.6	-0.7	20
DHANGADHI	330.9	111.9	12	7	5	2	88.9/25	33.4	1.0	35.8/6	24.3	0.2	22/21	28.9	0.6	28
DIPAYAL	159.6	95.5	9	5	3	0	49.3/1	33.6	0.6	39.5/22	22.8	0.8	20.5/19	28.2	0.7	28
JUMLA	71.3	69.4	11	3	0	0	13.6/5	25.0	0.7	34/8	14.1	1.8	9/19	19.5	1.3	1
SURKHET	89.2	46.7	14	4	0	0	14.7/4	31.6	1.6	33.5/20	22.0	0.4	19.9/18	26.8	1.0	27
NEPALGUNJ AIRPORT	69.0	34.0	9	2	1	0	34/14	35.7	3.1	38.8/6	24.5	0.1	21.5/14	30.1	1.6	30
CHAURJHARITAR	68.5	48.8	9	3	1	0	25/7	30.5	-0.3	33/2	21.0	0.1	19/18	25.7	-0.1	26
GHORAI (DANG)	191.0	82.6	15	6	3	0	37.6/10	30.6	1.4	32.6/19	22.2	0.8	20.5/18	26.4	1.1	22
JOMSOM	27.2	66.1	6	1	0	0	10/5	21.8	0.6	25.1/28	11.7	0.3	9/18	16.8	0.4	0
THAKMARPHA	47.6	87.3	9	1	0	0	13.8/13	20.8	0.8	23.5/2	7.1	-3.6	3/29	14.0	-1.4	0
TANSEN	94.3	41.4	12	3	1	0	37/1	28.2	0.4	31.5/20	18.9	0.4	17/25	23.6	0.4	8
BHAIKAWA AIRPORT	258.3	101.9	9	6	4	1	122.2/1	33.7	0.7	35.6/20	25.6	1.0	24.1/16	29.6	0.8	30
KHANCHIKOT	115.4	41.7	13	4	2	0	35.5/1	24.2	1.4	27.9/25	16.8	0.6	15.2/21	20.5	1.0	0
TAULIHAWA	75.8	33.6	8	2	1	0	42.2/3	32.4	-0.4	36.5/10	25.7	1.3	24.6/26	29.1	0.4	28
POKHARA AIRPORT	557.1	86.9	14	10	5	4	207/11	30.5	1.1	32.9/1	22.0	1.2	20.2/16	26.2	1.1	25
LUMLE	723.5	81.6	18	13	8	5	158.2/7	23.0	0.2	25.5/5	16.5	0.3	13/7	19.8	0.2	0
RAMPUR	226.8	72.5	15	7	4	0	38/15	33.4	0.4	35.3/20	24.3	0.1	22.3/24	28.8	0.3	29
SIMARA AIRPORT	262.7	90.0	8	5	5	3	72.6/16	33.5	1.2	35.5/19	24.7	0.5	23/23	29.1	0.8	30
GODAWARI	87.2	32.8	11	3	0	0	24.5/1	M	M	M	M	M	M	M	M	M
KATHMANDU AIRPORT	126.2	63.2	9	4	2	0	34.5/7	29.4	1.4	31.5/5	19.2	0.6	17/29	24.3	1.0	14
PANCHKHAL	77.1	46.8	9	5	0	0	17.3/11	32.3	1.5	34.5/18	21.6	0.8	19.5/25	26.9	1.2	27
DHUNIBESI	81.0	34.6	8	2	1	0	37.2/11	30.5	1.4	32/1	20.6	0.2	19/28	25.6	0.8	26
JIRI	192.1	60.0	16	6	2	1	63.6/11	24.3	1.1	26/18	15.3	0.2	11.6/20	19.8	0.6	0
JANAKPUR AIRPORT	136.8	69.3	8	5	2	0	40.2/14	34.2	1.9	36.2/9	25.8	0.5	24.6/14	30.0	1.2	26
JALESORE	120.5	84.5	8	5	2	0	33.5/7	33.8	0.3	36/9	26.9	1.3	24/22	30.3	0.8	30
KABRE	164.1	43.0	17	6	2	0	29.2/11	25.9	1.2	28.5/20	17.0	0.1	12/22	21.4	0.7	0
OKHALDHUNGA	48.7	19.8	11	1	0	0	14.1/11	25.4	1.1	27.3/23	16.9	0.2	15.2/11	21.2	0.7	0
UDAYPURGADHI	276.2	88.5	15	9	3	2	80.8/11	31.9	1.6	33.6/2	23.1	-0.1	21.2/27	27.5	0.7	27
LAHAN	190.0	87.5	13	7	3	0	43.5/14	33.4	1.2	35/5	25.4	0.8	24/15	29.4	1.0	30
RAJBIRAJ	179.4	76.1	10	6	3	0	45/10	32.9	-0.1	35/19	26.3	1.6	25/14	29.6	0.7	30
DHANKUTA	110.5	83.0	8	5	1	0	32.3/11	27.8	0.8	30/5	19.9	0.8	18.6/22	23.8	0.8	2
DHARAN	271.6	69.3	16	7	3	2	72.8/9	32.0	0.1	34/19	24.7	1.7	23.4/23	28.4	0.9	27
BIRATNAGAR AIRPORT	236.5	79.2	10	6	4	1	73.2/10	33.6	1.5	35.3/4	25.5	0.8	24/14	29.5	1.1	29
TARAHARA	180.6	58.5	10	7	1	1	54/16	33.2	1.1	36/5	24.3	0.3	22.5/23	28.8	0.7	29
KHADBARI	247.2	80.0	19	7	4	0	45.2/14	26.7	-0.6	30/5	21.1	0.8	19.5/15	23.9	0.1	1
TAPLEJUNG	125.5	46.1	13	4	1	0	34.6/11	25.2	1.3	28.5/5	17.7	1.2	16.1/20	21.4	1.2	0
KANKAI	412.7	95.6	16	8	5	3	119.5/10	33.3	0.5	35.5/18	22.4	-0.5	21/23	27.9	0.0	28

Max 723.5 111.9 19.0 13.0 8.0 5.0 207.0/11 35.7 3.1 39.5/22 26.9 1.8 28.0/5 30.3 1.6 30.0
Min 27.2 19.8 6.0 1.0 0.0 0.0 0.0 20.8 -1.6 15.0/21 7.1 -3.6 3.0/29 14.0 -1.4 0.0

Remarks: M= Data not available

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.

Fig.5

Monsoon Monitoring

(1 June - 30 September)

