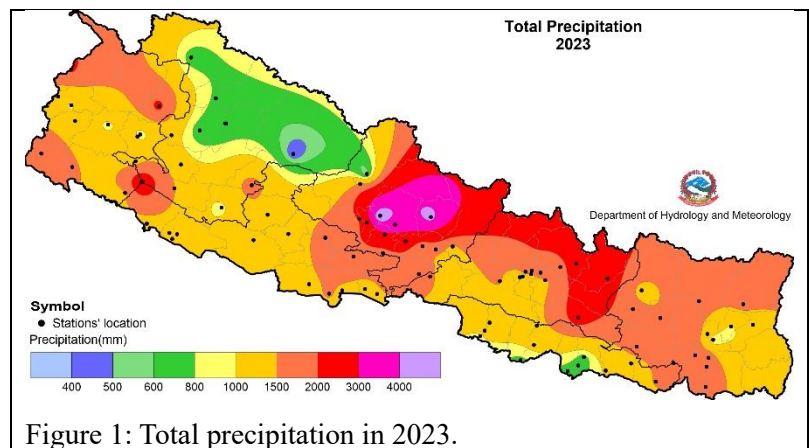




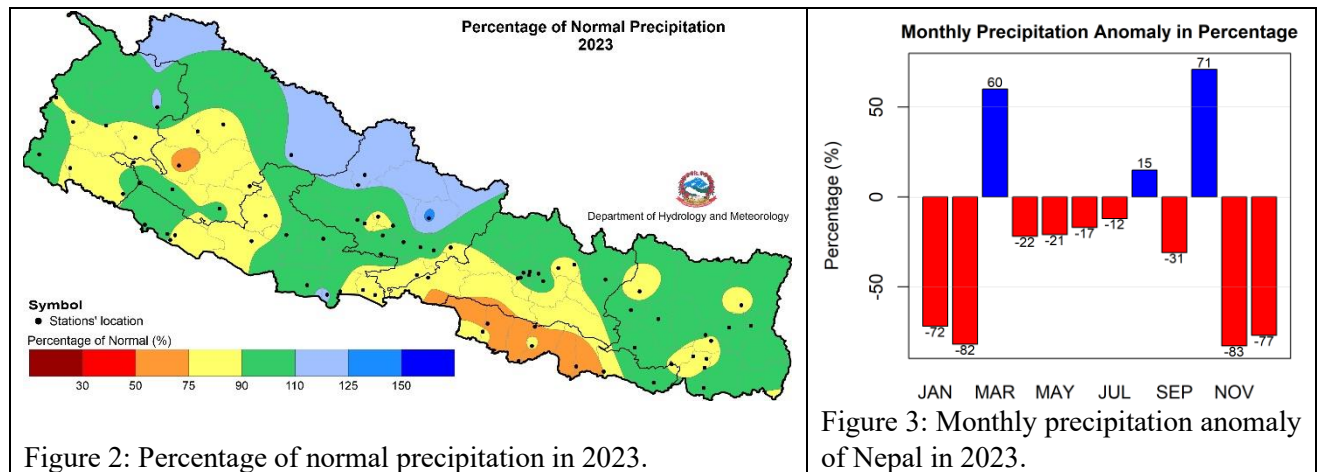
Nepal Climate Summary 2023

The country as a whole received 91.2% of the normal precipitation which was about 1570.4 mm. The average maximum temperature was 27.9°C (0.6°C above than normal annual maximum temperature) and the average minimum temperature of Nepal was 15.6°C (0.5°C above than normal annual minimum temperature) in 2023.

Northern part of Karnali Province, received less precipitation (Dunai station of Dolpa district recorded 410.7 mm precipitation) while isolated parts of Gandaki Province received rainfall more than 4000 mm (Lumle station of Kaski district recorded the highest total precipitation of 4625.9 mm) (Figure 1). In comparison to normal



precipitation, the highest (129%) and the lowest (51%) percentage of normal precipitation were recorded at Khudibazar station and Janakpur Airport station respectively (Figure 2).



During the initial two months of the year, Nepal experienced a significant deficit in monthly precipitation, recording the below normal precipitation by 72% and 82% respectively. However, in March, there was a notable increase with precipitation exceeding the normal levels by 60%. Subsequently, from April to July, the precipitation remained below normal, ranging from 12% to 22%. August witnessed increased rainfall above



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15% of normal, while September received lower than normal precipitation by 31% and above normal precipitation was recorded in October by 71%. November and December were dry with 83% and 77% deficit respectively (Figure 3). Since 1981, this year ranked as the 8th lowest in terms of annual precipitation (Figure 4).

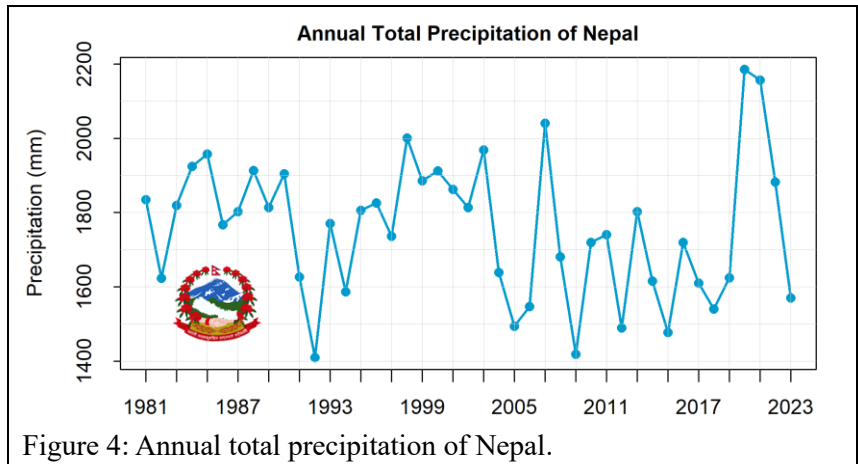


Figure 4: Annual total precipitation of Nepal.

The average maximum temperature was above 30°C in the southern part of the country while northern part was below 18°C (Figure 5).

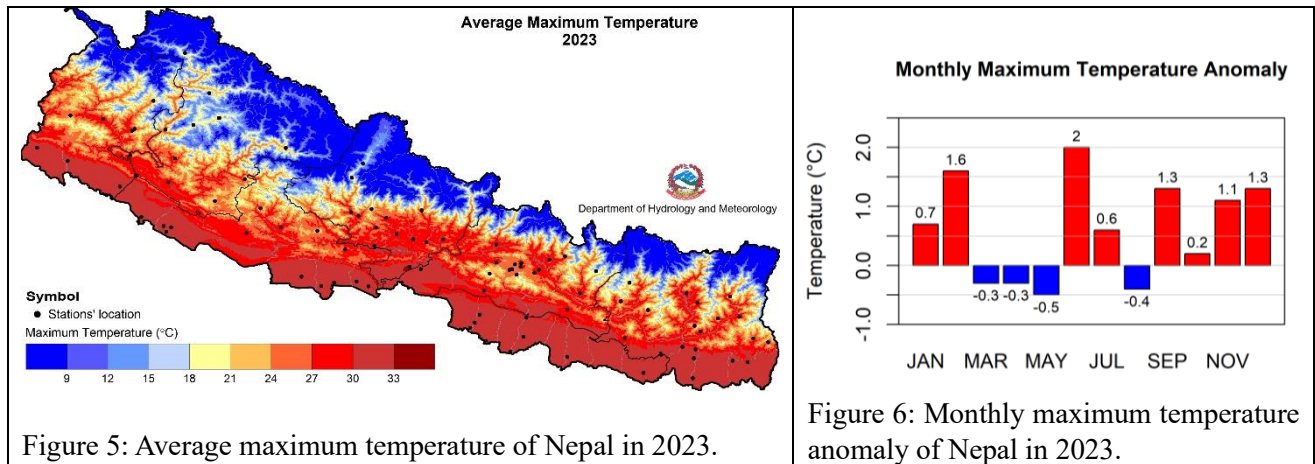


Figure 5: Average maximum temperature of Nepal in 2023.

Figure 6: Monthly maximum temperature anomaly of Nepal in 2023.

Nepal observed an increased monthly maximum temperature in the first two months. From March to May, maximum temperatures were below normal, while June and July recorded above normal maximum temperatures. June was warmer by +2.0°C, which is the highest deviation among all months. August witnessed the below normal maximum temperature, while the last four months, September to December witnessed temperatures above the normal range (Figure 6). 2023, was one of the warmest years since 1981 (Figure 7).

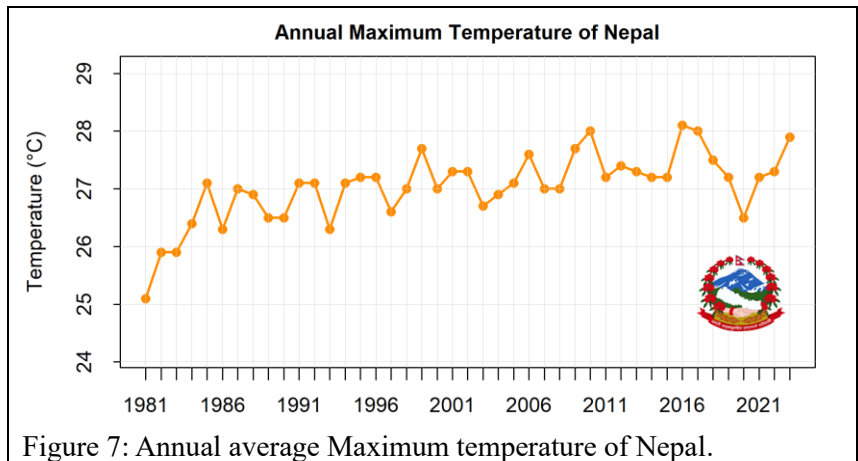


Figure 7: Annual average Maximum temperature of Nepal.



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Minimum temperature was above 18°C in the southern part while northern part was below 0°C. Monthly minimum temperatures in Nepal were above normal in all months in 2023 except in April and May (Figure 9). Comparing the annual average minimum temperatures since 1981, it is the second warmest year (Figure 10).

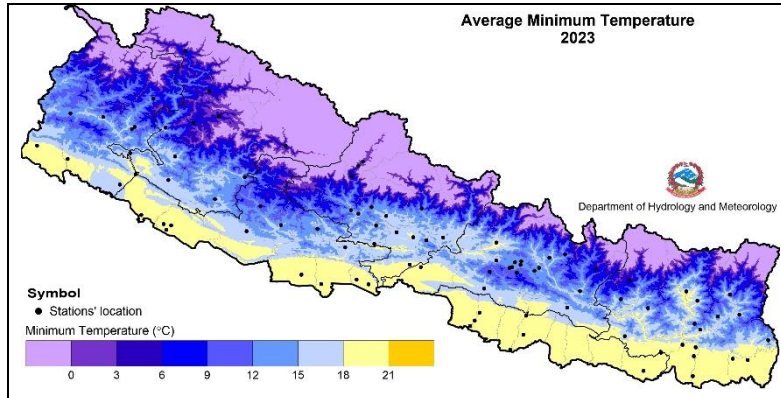


Figure 8: Average minimum temperature of Nepal in 2023.

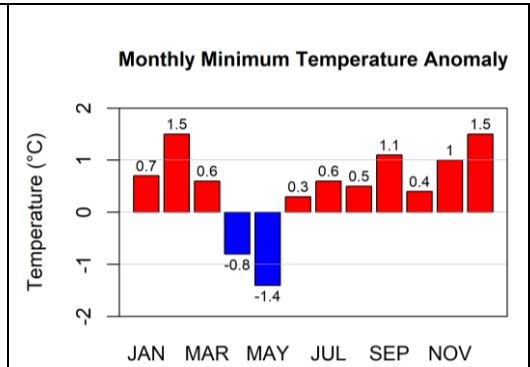


Figure 9: Monthly minimum temperature anomaly of Nepal in 2023.

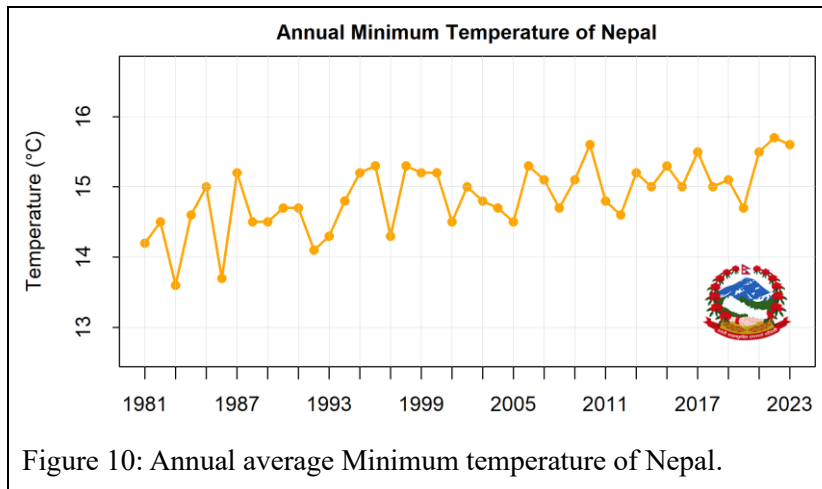


Figure 10: Annual average Minimum temperature of Nepal.

Hot days and Heat wave

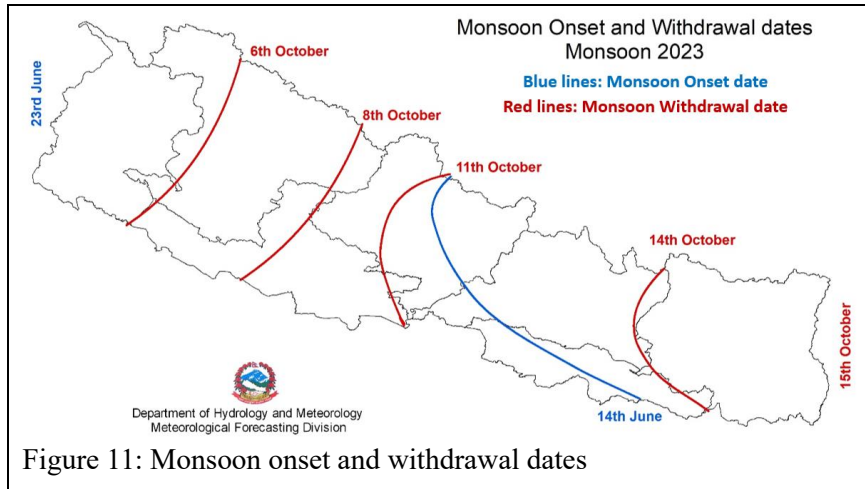
The southern part of the country experienced hot days and mild to moderate heat wave condition in the third week of April which lasted for a week. Similarly, sudden increase in maximum temperature by the end of May led to mild to severe heat wave conditions over large parts of the country which continued till the second week of June. The heat wave was persistent over central and western parts of the country before the onset of monsoon over the region until third week of June. The temperature exceeded 42°C for a few days at some places in the southern parts specially Kapilbastu, Rupandehi, Nawalparasi-West, Chitwan, Parsa, Bara, Sarlahi, Dhanusha, Mahottari and Siraha districts.



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Onset and Withdrawal of Monsoon

Monsoon entered into eastern Nepal one day later than normal onset day on 14th June and withdrew from eastern Nepal on 15th October delayed by thirteen days (Figure 11). The duration of Monsoon was 124 days, which was twelve days longer than normal Monsoon period (112 days).



Historical record break

In this year, several stations broke the previous record of extremes of temperature and precipitation.

List of stations breaking previous record of ever-recorded highest daily maximum temperature in 2023.

S.N.	Station Name	District	Record break maximum temperature (°C)/Date	Previous highest maximum temperature (°C)/Date
1	Bandipur	Tanahun	35.7/2023-06-08	35.5/2018-06-12
2	Chatara	Sunsari	40.7/2023-08-01	40.5/2016-04-25
3	Chautara	Sindhupalchok	35.6/2023-06-23	34.8/2011-04-26
4	Dharan Bazar	Sunsari	39.3/2023-06-07	38.8/2013-04-12
5	Dumkauli	Nawalparasi-East	44.8/2023-06-09	43.7/1979-06-05
6	Gorkha (Birenchowk)	Gorkha	39.0/2023-06-08	38.0/2014-05-08
7	Janakpur Airport	Dhanusha	42.5/2023-06-09	42.2/1989-05-07
8	Kanyam Tea Estate	Ilam	30.0/2023-06-03	29.0/1973-07-10
9	Okhaldhunga	Okhaldhunga	32.5/2023-06-09	30.9/1999-04-28
10	Rampur	Chitwan	43.5/2023-06-08	43.2/1989-05-06
11	Simara Airport	Bara	42.6/2023-06-08	42.4/1979-06-02
12	Siraha	Siraha	42.5/2023-06-08	41.5/2012-05-15

List of stations breaking previous record of ever-recorded highest daily precipitation in 2023.

S.N.	Station Name	District	Record break daily precipitation (mm)/Date	Previous highest precipitation(mm)/Date
1	Diktel	Khotang	205.4/2023-06-12	158.6/1993-07-21