



MONTHLY CLIMATE SUMMARY
for
July, 2023

**Meteorological Services Division
National Centre for Hydrology and Meteorology
Royal Government of Bhutan**

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Highlights

- The monsoon season is expected from June - September and during the month of July 2023, most parts of the regions received good amount of rainfall.
- The lowest daily minimum temperature was recorded at Gasa met station (10.0°C).
- The highest daily maximum temperature was recorded at Bhur met station (36.5°C)
- The highest daily rainfall was recorded at Bhur met station (251.4 mm).
- Phuentsholing met station recorded the highest total rainfall of 1566.1 mm for July month.
- All the computations are based on real time observed data of 20 Agrometeorological (Class A) stations.

Rainfall

Bhutan experiences the summer monsoon during the month of June to September. Bhutan received most of its annual rainfall during summer monsoon so, the Centre monitors the performance of monsoon and issue an outlook for the monsoon season. The normal is the monitoring of long-term average rainfall of Bhutan from 1996-2022. The relationship between the long-term average or normal (1996-2022) with the monthly real time observation data (2023) is also analyzed. For the month of July 2023, the country as a whole received near normal rainfall.

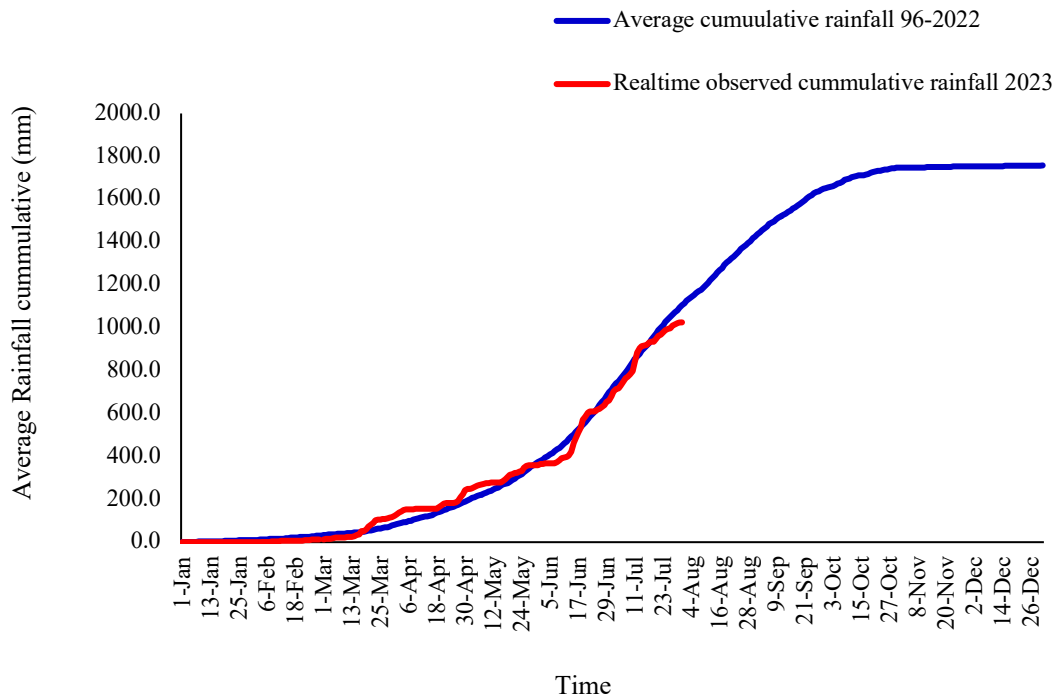


Figure 1: Observed rainfall (July, 2023) against the long-term average (1996-2022)

Rainfall recorded at each met station – July 2023

Table 1: Highest daily observation rainfall and total observation rainfall recorded at each met stations in July month

Stations	Daily Rainfall (mm)	Total Rainfall (mm)
Bhur	251.4	1397.9
Chamkhar	34.5	124.1
Dagana	40.8	219.8
Damphu	72.4	336.5
Deothang	120.0	704.5
Gasa	34.5	124.1
Haa	31.5	172.4
Kanglung	58.6	168.4
Mongar	20.6	87.1
Paro	27.2	88.7
Pemagatshel	87.4	274.7
Phuentsholing	213.6	1566.1
Punakha	21.4	92.8
Babesa	23.4	105.2
Sipsu	189.4	1088.8
Tangmachu	17.9	105.5
Trashiyangtse	23.5	169.7
Trongsa	34.2	194.3
Wangdue	15.4	83.0
Zhemgang	32.7	201.0

The following map shows the spatial distribution of total rainfall across Bhutan during July 2023. The southern and parts of southwest region received more amount of rainfall as compared to other remaining regions.

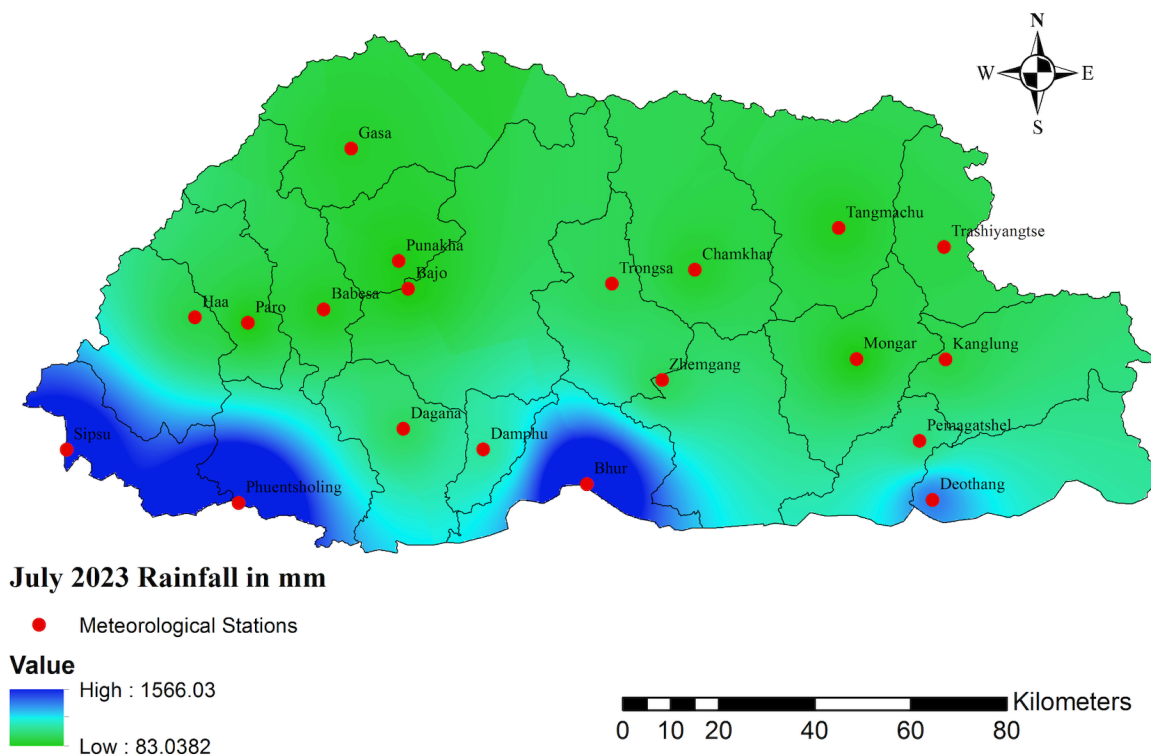
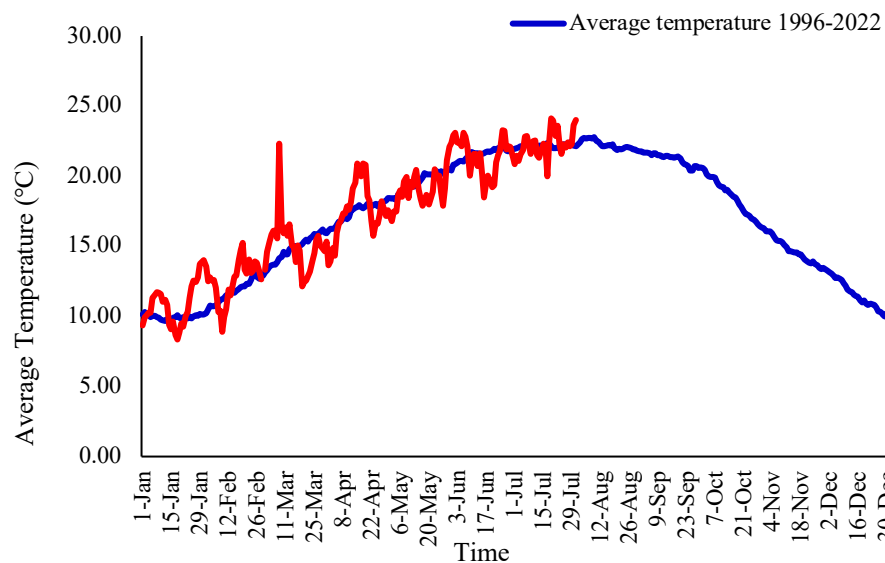


Figure 2: Spatial distribution of total rainfall during July 2023

Temperature

The normal is the monitoring of long-term average temperature of Bhutan from (1996-2022). The behavior of observed real time average temperature (2023) against the long-term average (1996-2021) is analyzed. Thus, for the month of July 2023, the observed average temperature was mostly near normal.



Highest daily maximum temperature recorded at each met station – July 2023

Table 2: Highest daily observation maximum recorded at each met stations in July month

Stations	Maximum Temperature (°C)
Bhur	36.5
Chamkhar	26.5
Dagana	30.0
Damphu	27.0
Deothang	36.0
Gasa	26.0
Haa	23.5
Kanglung	29.5
Mongar	30.0
Paro	29.0
Pemagatshel	32.0
Phuentsholing	36.0
Punakha	33.8
Babesa	29.0
Sipsu	35.5
Tangmachu	36.0
Trashiyangtse	31.0
Trongsa	27.5
Wangdue	33.5
Zhemgang	29.5

Lowest daily minimum temperature recorded at each met stations – July 2023

Table 3 Lowest daily minimum temperature recorded at each met stations in July month

Stations	Minimum Temperature (°C)
Bhur	23.0
Chamkhar	12.5
Dagana	18.5
Damphu	19.0
Deothang	21.0
Gasa	10.0
Haa	12.0
Kanglung	15.5
Mongar	18.0
Paro	13.0
Pemagatshel	18.0
Phuentsholing	19.0
Punakha	21.5

Babesa	13.4
Sipsu	20.0
Tangmachu	19.5
TrashiYangtse	14.5
Trongsa	12.0
Bajo	18.0
Zhemgang	16.0

The map below shows the spatial variation of maximum, minimum and average temperature during July month.

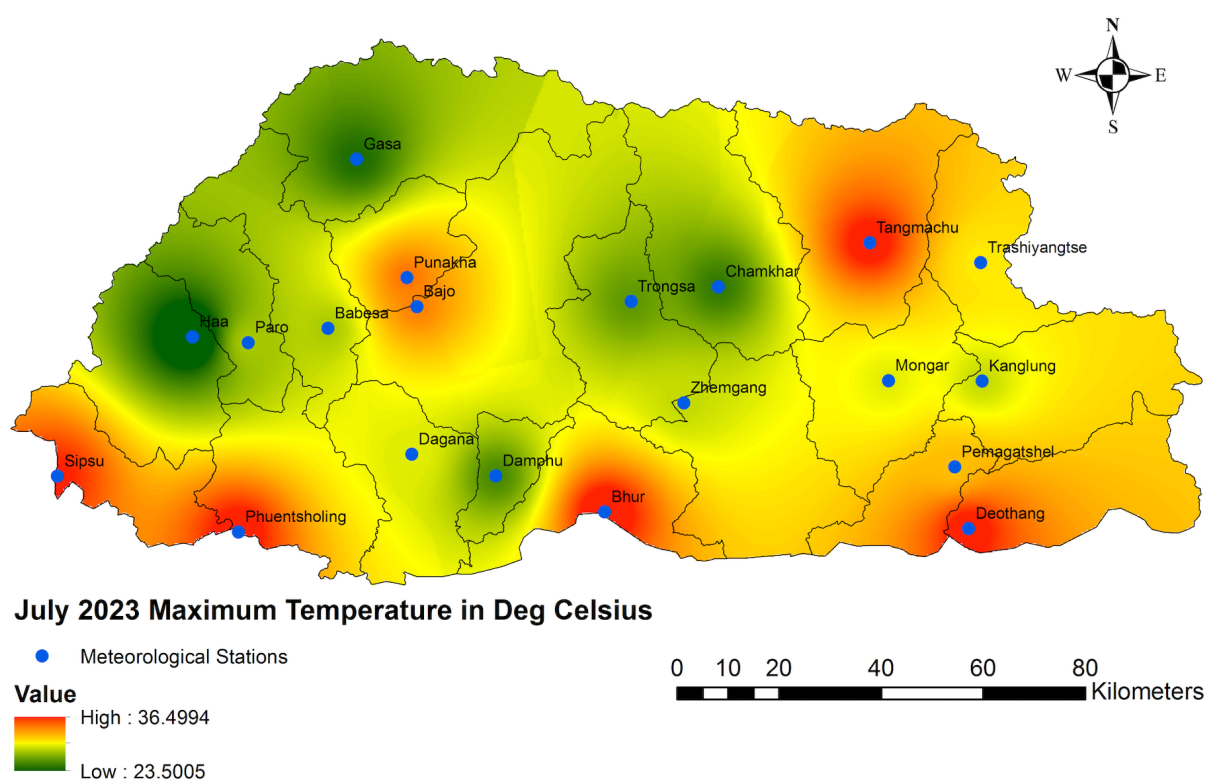


Figure 4: Spatial variation of maximum of maximum temperature during July 2023

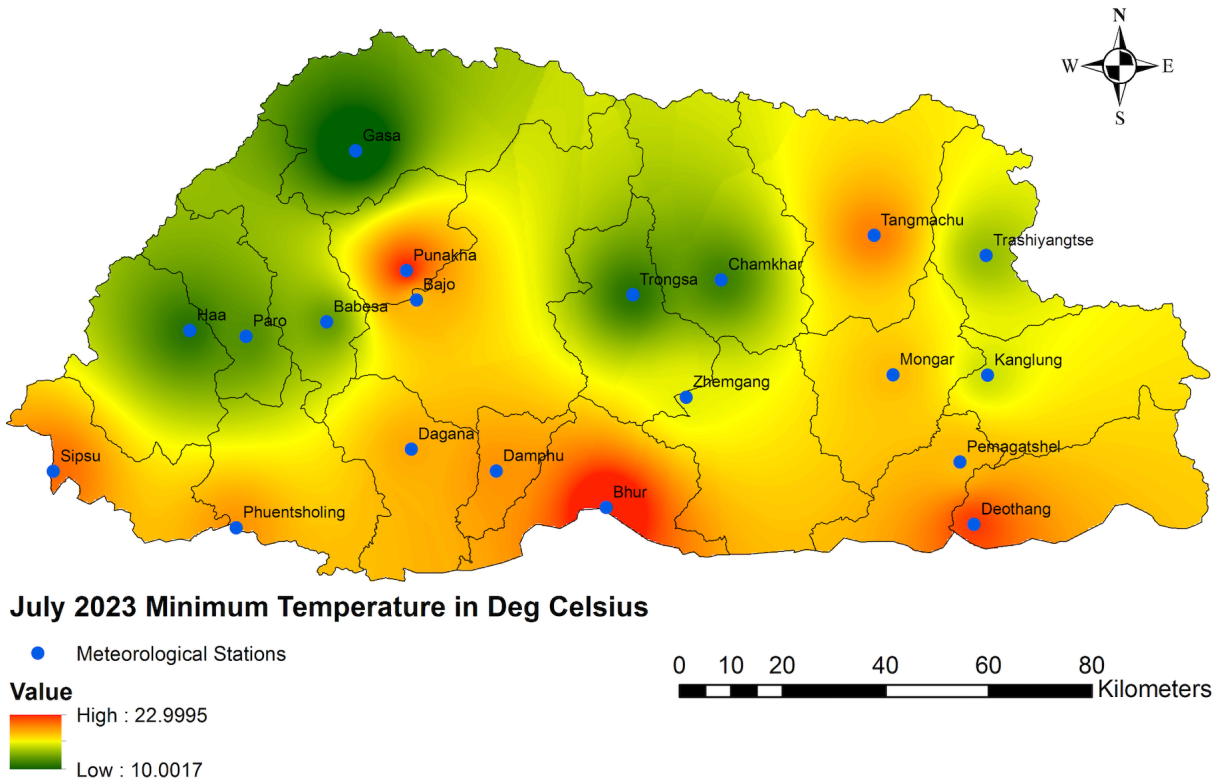


Figure 5: Spatial variation of minimum of minimum temperature during July , 2023

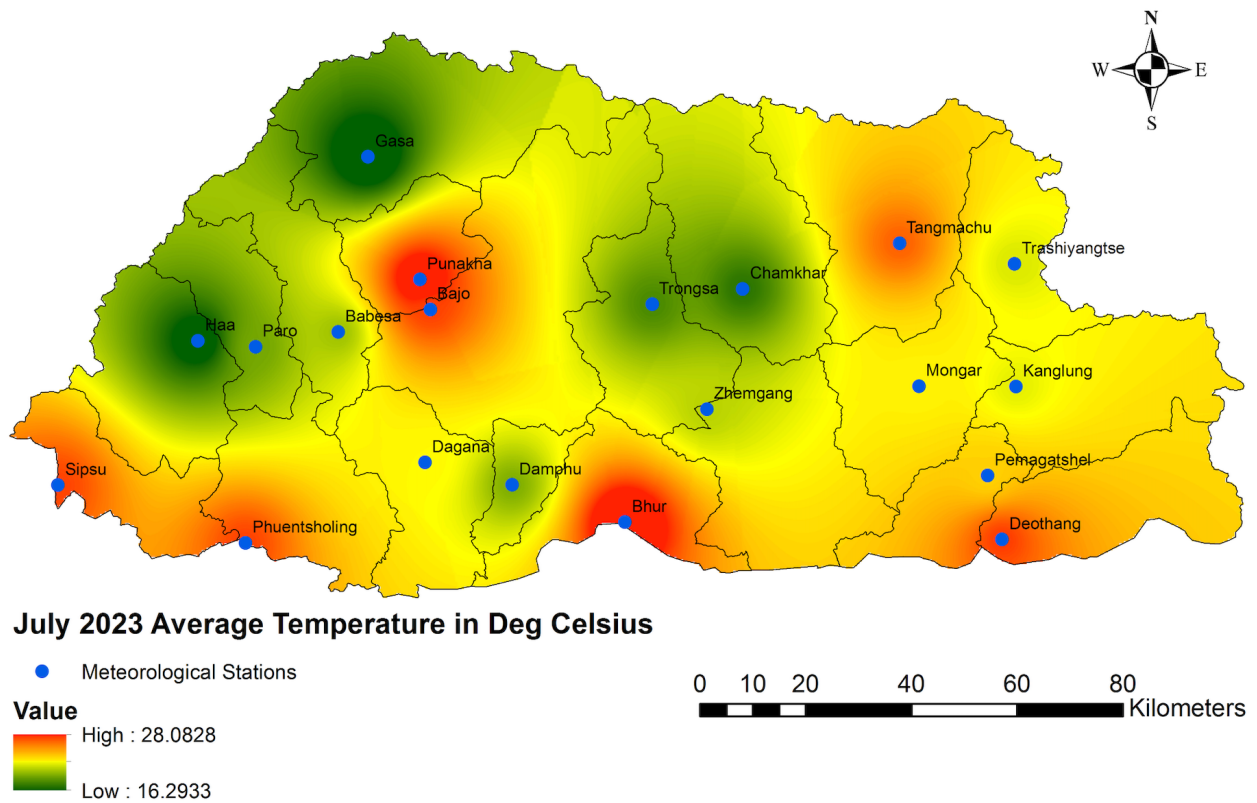


Figure 6: Spatial variation of average temperature during July 2023

