



MONTHLY CLIMATE SUMMARY
For
January 2023

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

Highlights

- The winter monsoon season is expected from December - February and the country is mostly dry during that period. During the month of January 2023, the country did not received rainfall.
- The lowest daily minimum temperature was recorded at Haa met station (-10.5°C).
- The highest daily maximum temperature was recorded at Punakha met station (29.0°C)
- The highest daily rainfall was recorded at Gasa met station (1.0 mm).
- Gasa met station recorded the highest total rainfall of 1.0 mm for January 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 January 2023, the country as a whole received near normal rainfall.

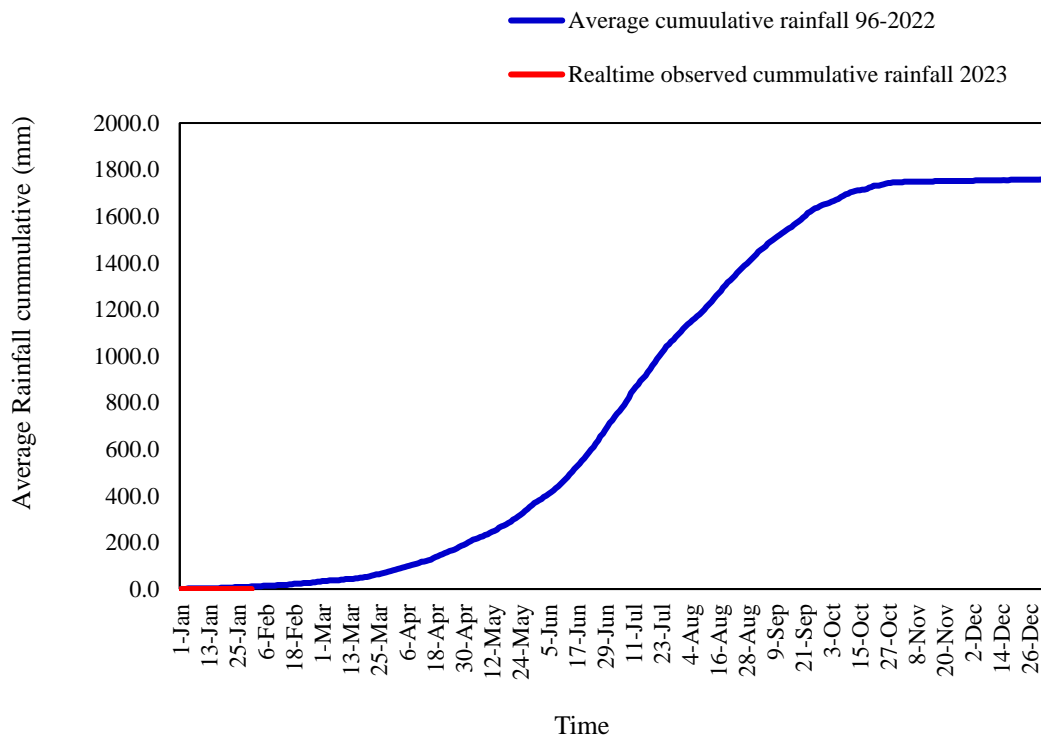


Figure 1: Observed rainfall (January 2023) against the long-term average (1996-2022)

Highest daily observation rainfall recorded at each met stations – January 2023

Table 1 Highest daily observation rainfall recorded at each met stations in January month

Stations	Rainfall (mm)
Bhur	0.0
Chamkhar	0.0
Dagana	0.0
Damphu	0.0
Deothang	0.0
Gasa	0.0
Haa	0.0
Kanglung	0.0
Mongar	0.0
Paro	0.0
Pemagatshel	0.0
Phuentsholing	0.0
Punakha	0.0
Babesa	0.0
Sipsu	0.0
Tangmachu	0.0
Trashiyangtse	0.0
Trongsa	0.0
Wangdue	0.0
Zhemgang	0.0

Total observation rainfall recorded at each met stations – January 2023

Table 2 Total observation rainfall recorded at each met stations in January month

Stations	Total Rainfall (mm)
Bhur	0.0
Chamkhar	0.0
Dagana	0.0
Damphu	0.0
Deothang	0.0
Gasa	1.0
Haa	0.0
Kanglung	0.0
Mongar	0.0
Paro	0.0

Pemagatshel	0.0
Phuentsholing	0.0
Punakha	0.0
Babesa	0.0
Sipsu	0.0
Tangmachu	0.0
Trashiyangtse	0.0
Trongsa	0.0
Wangdue	0.0
Zhemgang	0.0

The following map shows the spatial distribution of total rainfall across Bhutan during January 2023. Only the northern parts of region received light rainfall as compared to other remaining regions.

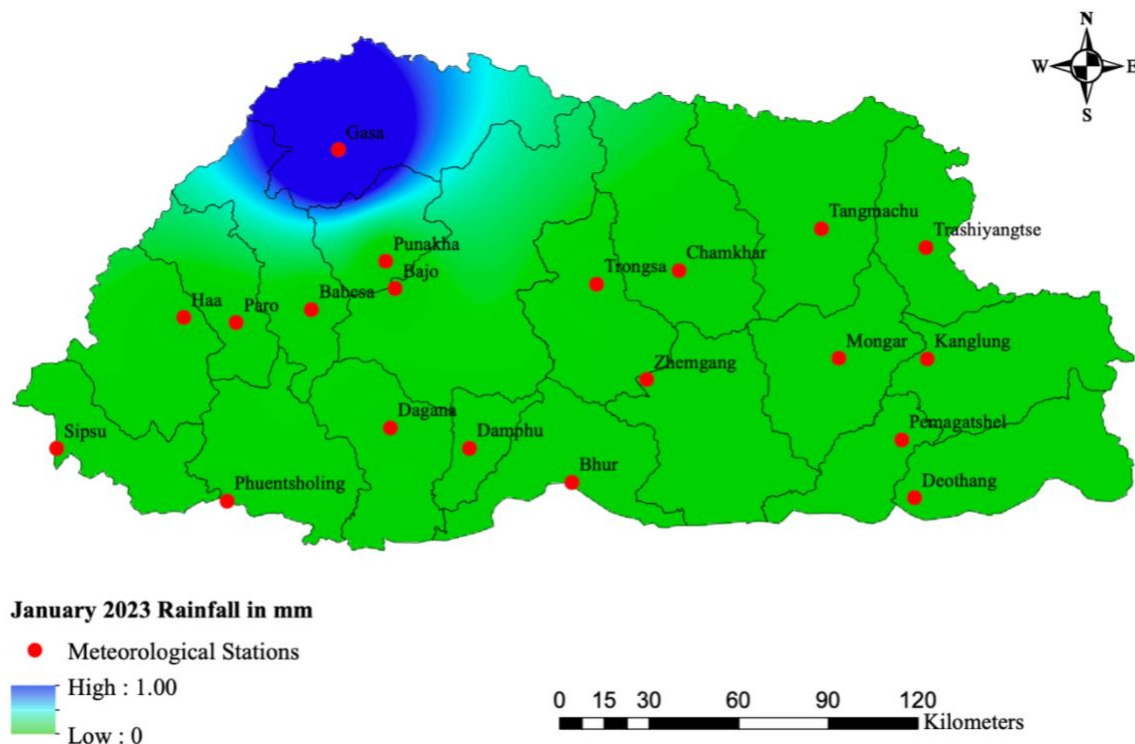


Figure 2: Spatial distribution of total rainfall during January 2023

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 (1996-2022) is analyzed. Thus, for the month of January 2023, the observed average temperature was mostly near normal to slightly above normal for few days.

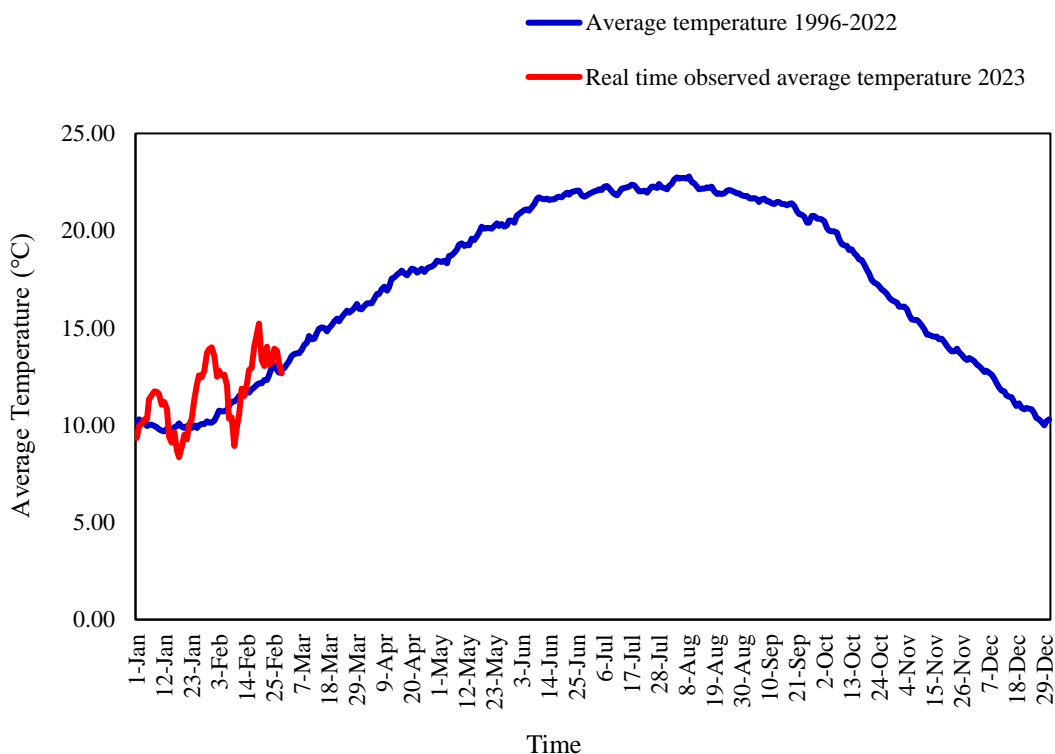


Figure 3: Average observed temperature (January 2023) against long-term average (1996-2022)

Highest daily maximum temperature recorded at each met stations – January 2023

Table 3 Highest daily maximum temperature recorded at each met stations in January month

Stations	Maximum Temperature (°C)
Bhur	26.0
Chamkhar	19.5
Dagana	25.0
Damphu	21.0
Deothang	26.0
Gasa	16.0
Haa	16.0
Kanglung	21.0

Mongar	21.0
Paro	21.0
Pemagatshel	22.0
Phuentsholing	28.5
Punakha	29.0
Babesa	20.0
Sipsu	28.0
Tangmachu	26.0
TrashiYangtse	20.5
Trongsa	20.5
Bajo	26.0
Zhemgang	20.0

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

Table 4 Lowest daily minimum temperature recorded at each met stations in January month

Stations	Minimum Temperature (°C)
Bhur	12.0
Chamkhar	-9.0
Dagana	2.5
Damphu	3.0
Deothang	7.0
Gasa	-6.0
Haa	-10.5
Kanglung	1.5
Mongar	3.0
Paro	-7.0
Pemagatshel	2.5
Phuentsholing	8.0
Punakha	3.0
Babesa	-7.5
Sipsu	9.0
Tangmachu	5.0
TrashiYangtse	-1.5
Trongsa	-1.5
Bajo	1.0
Zhemgang	-0.5

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

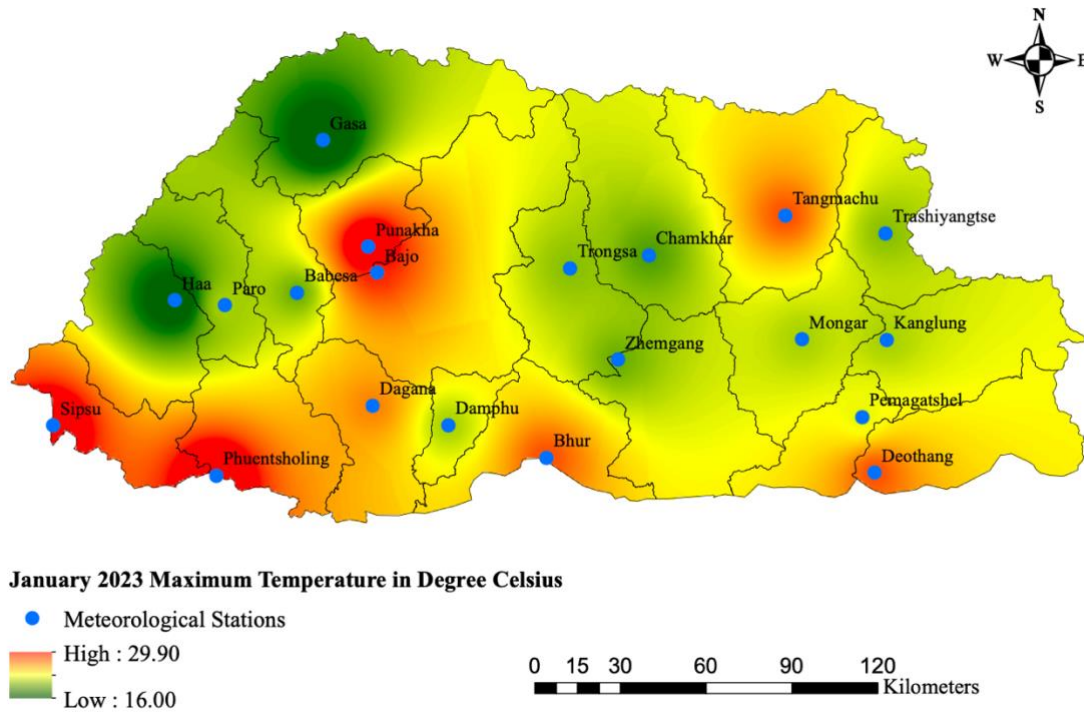


Figure 4: Spatial variation of maximum of maximum temperature during January 2023

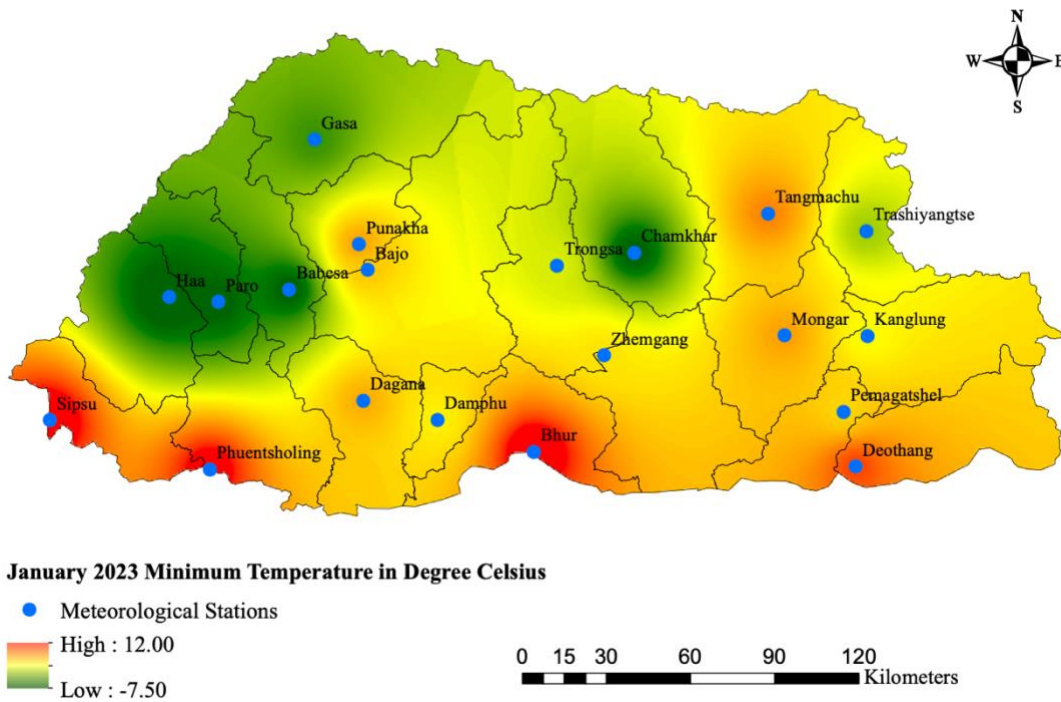


Figure 5: Spatial variation of minimum of minimum temperature during January 2023

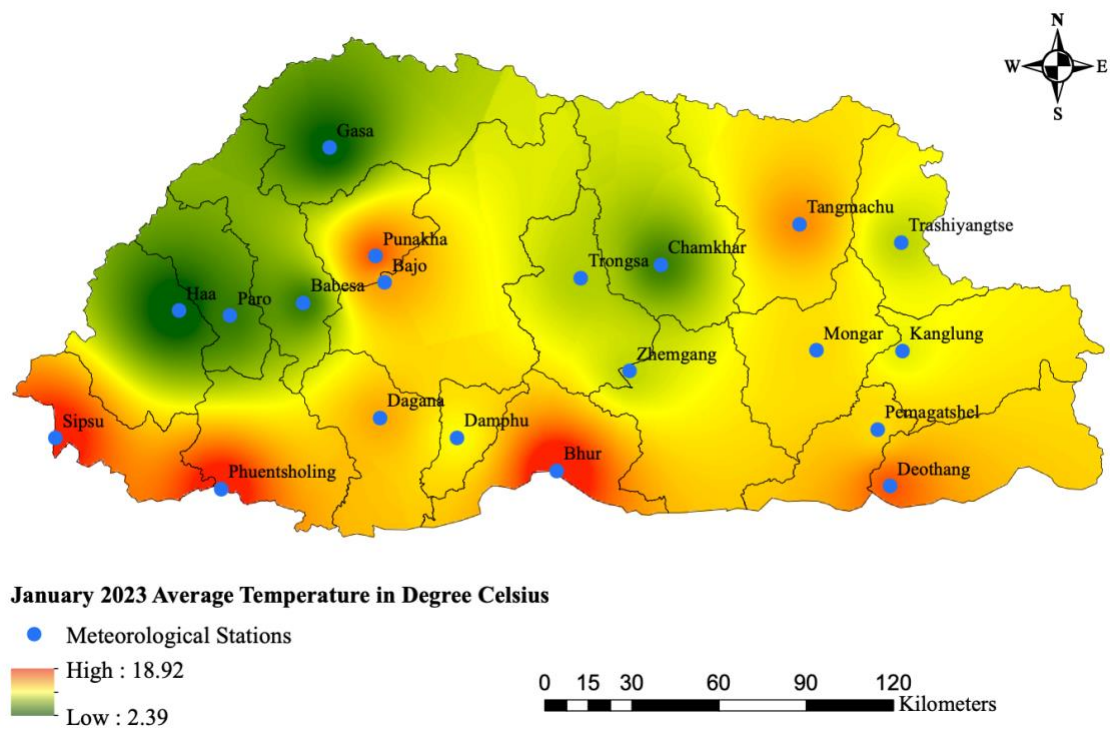


Figure 6: Spatial variation of average temperature during January 2023