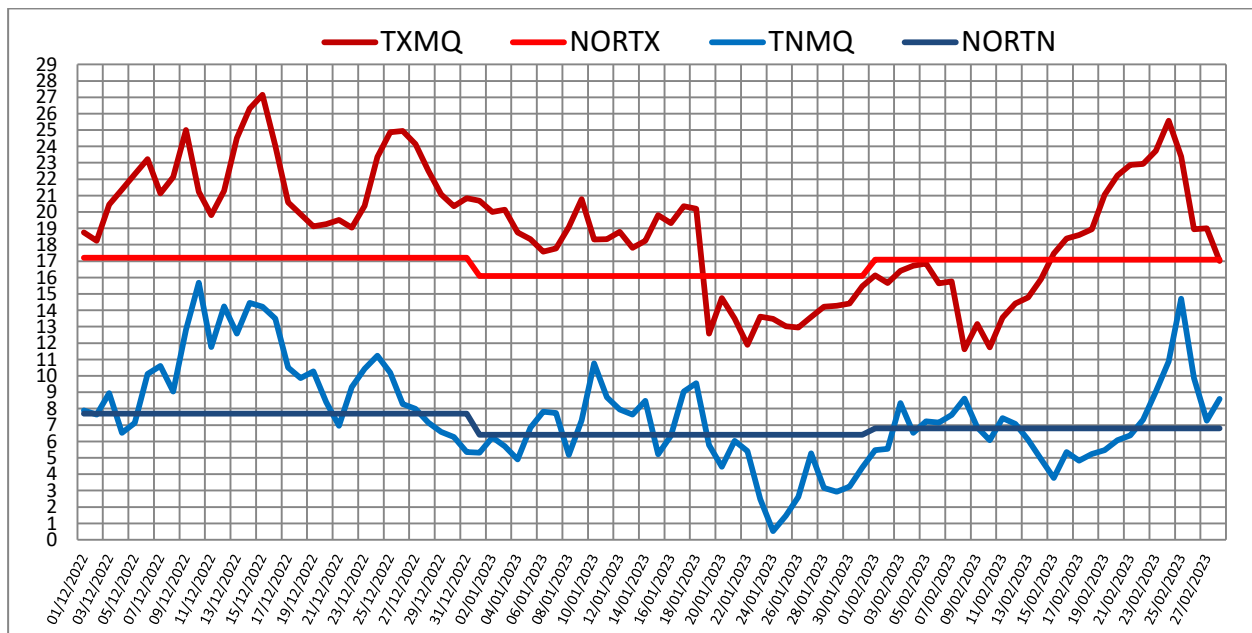


Climatological Report for winter 2022-2023 (December- January- February)

The beginning of this winter (2022-2023) in Tunisia was characterized by temperatures well above normal for the season from December 1 to February 18. They then declined while reaching below normal values for twenty days, then becoming above normal until the end of the season. The average seasonal temperature (27 main stations) reached 13.2°C and exceeded the normal (11.8°C) by +1.4°C which ranks this winter as the fifth warmest winter.

With regard to rainfall, the seasonal accumulation of the main stations reached 1553 mm, i.e. 50% of the seasonal accumulation of the same stations (3109 mm), this deficit affected almost all of our regions and it was more marked on the central and western regions of the country.

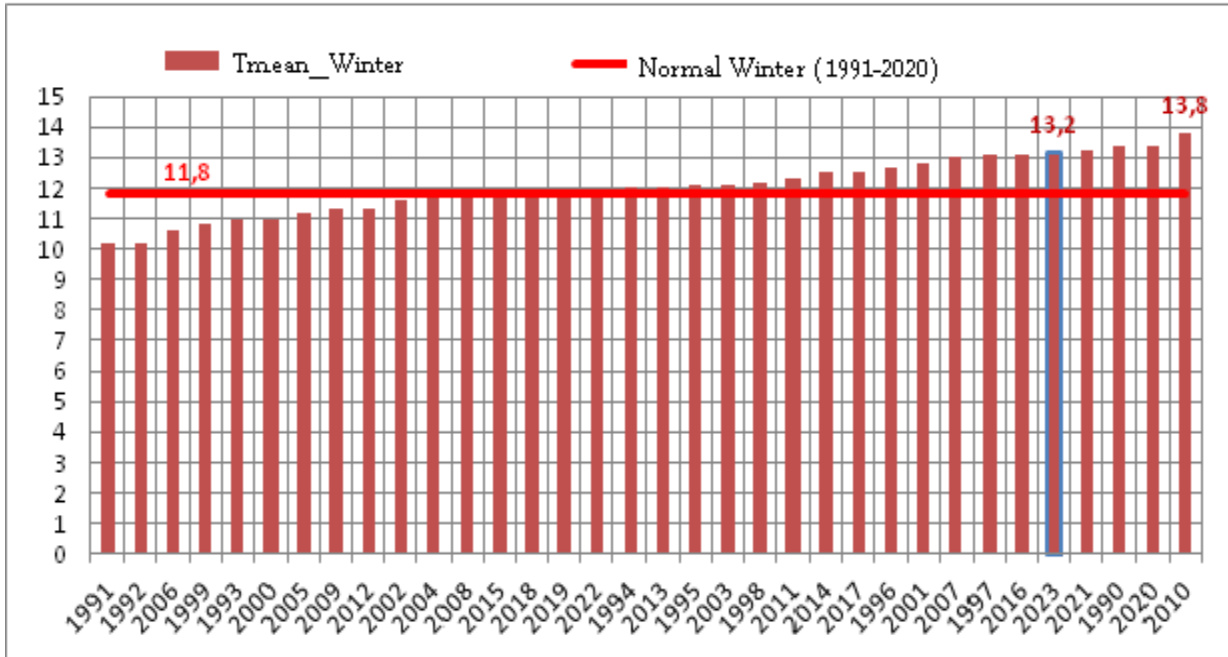
- Daily Evolution of average minimum and maximum temperatures:



Evolution of minimum and maximum daily temperatures during the winter (2022-2023)

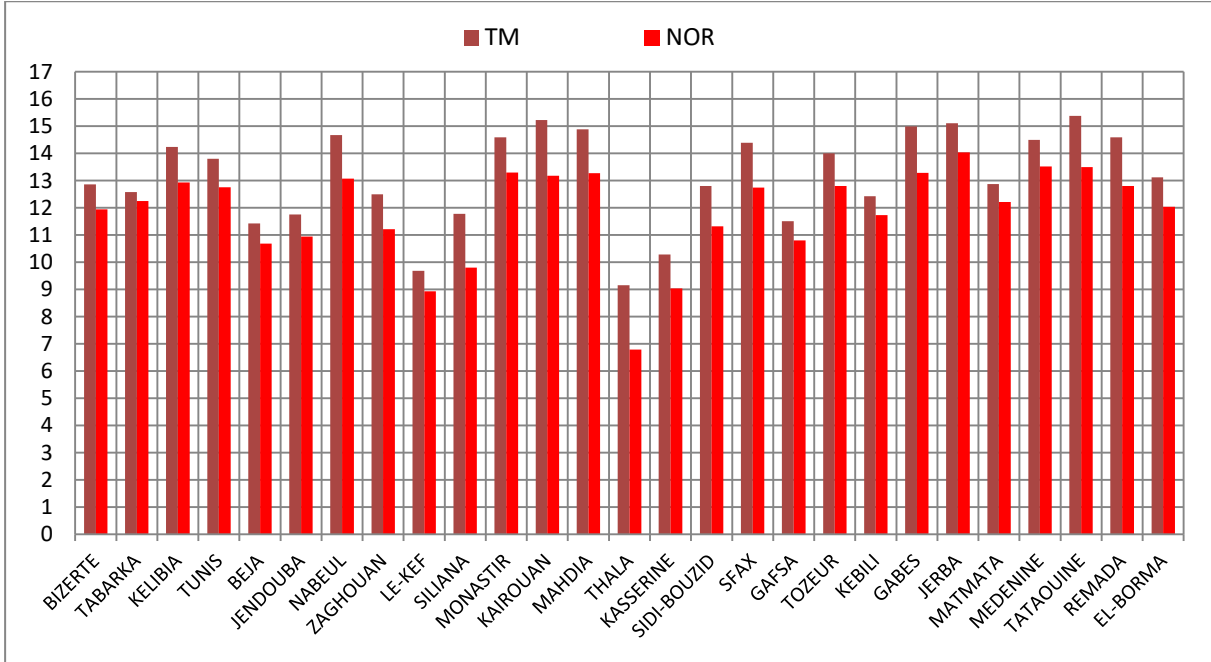
- Mean temperature :

The general average of daily temperatures for the winter (2022-2023) exceeded the normal by 1.4°C, ranking this winter as the **fifth** warmest winter.



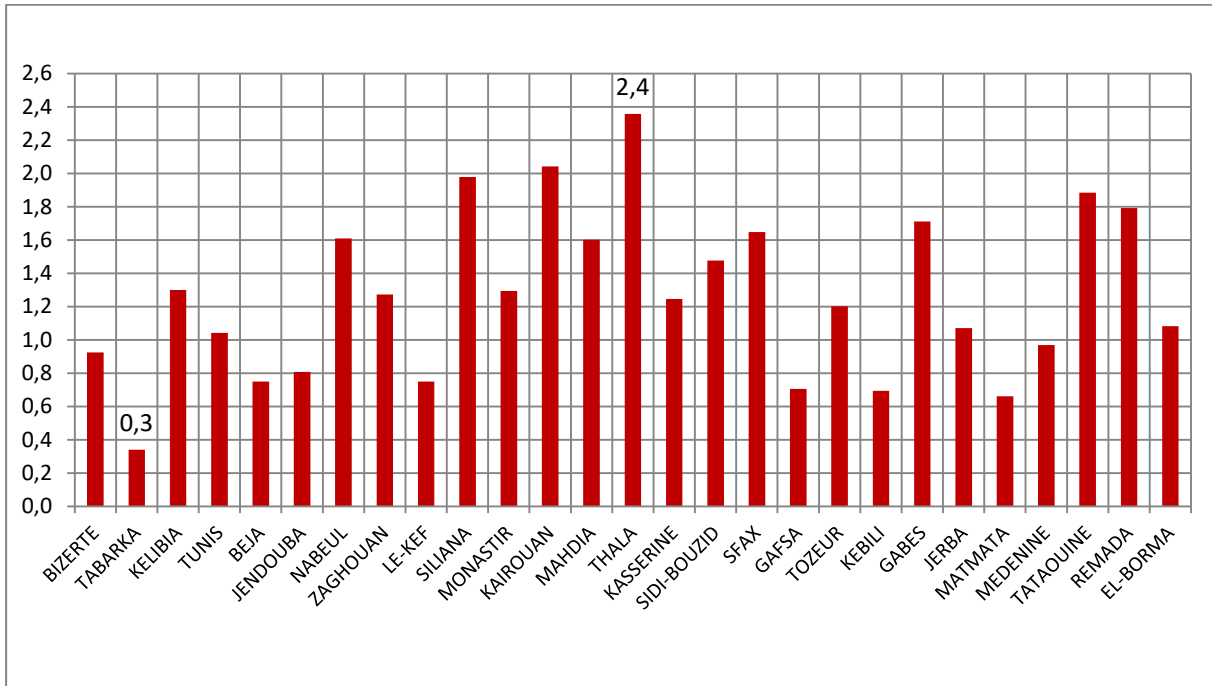
Deviations from the reference seasonal average (1991-2020)
average winter temperature from the 1990 to 2023

Without exception, seasonal mean temperatures in all stations were above normal.

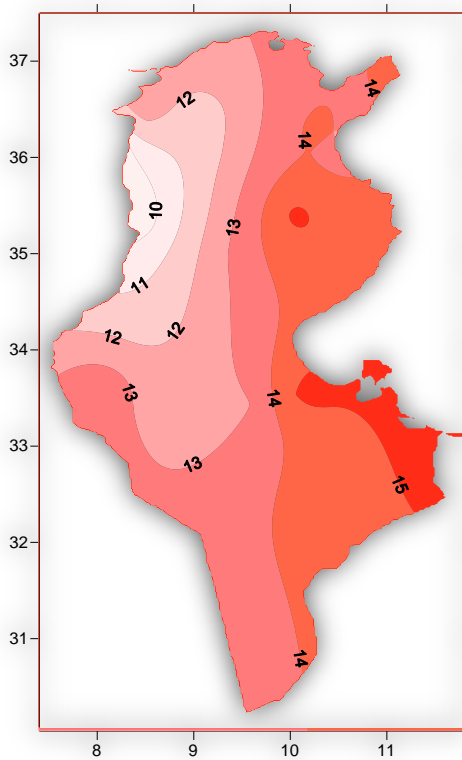


Comparison of mean temperatures (winter 2022-2023) to winter normals (1991-2020)

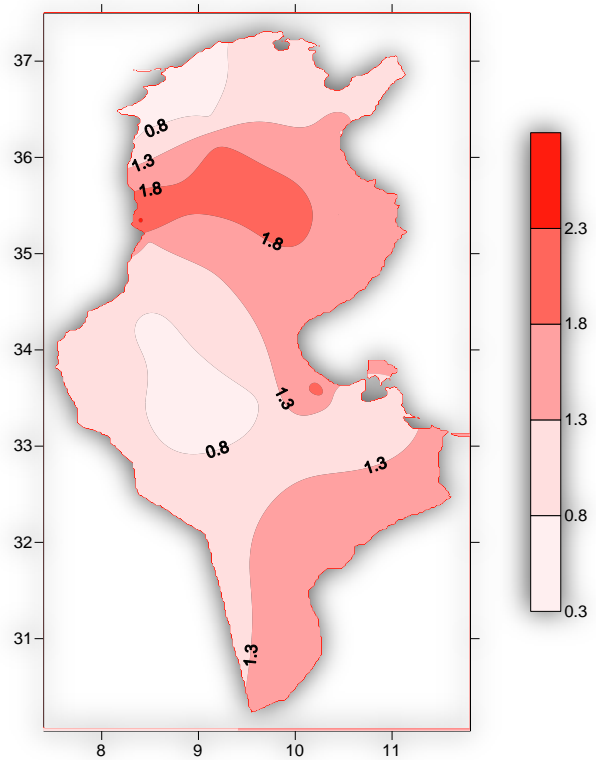
At the regional level, the differences between the average seasonal temperatures and the normal varied between +0.3°C in Tabarka and +2.4°C in Thala.



Deviation from the reference seasonal average (1991-2020)
daily temperature averages for winter (2022-2023)

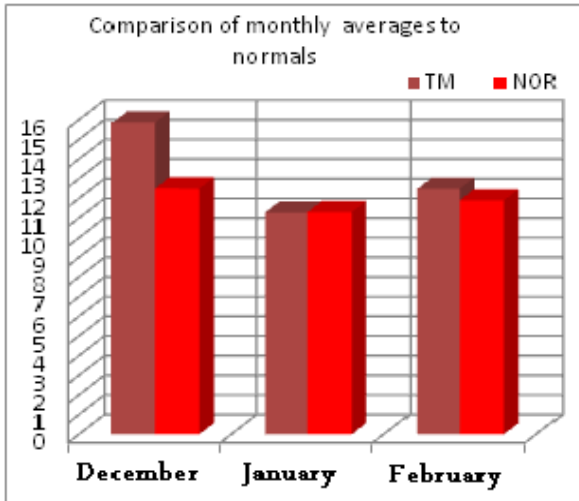


Mean Temperature T_m (°C)

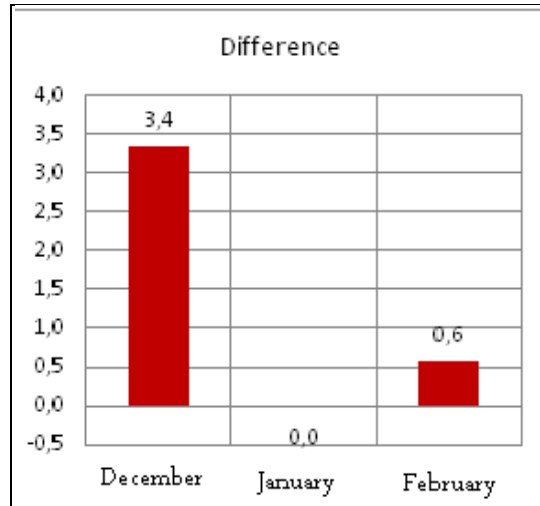


Deviation from the seasonal average of T_m (°C)

On a monthly scale, the month of December was very hot and even broke the record for the hottest December months with an anomaly of +3.4°C, which influenced the general winter average.



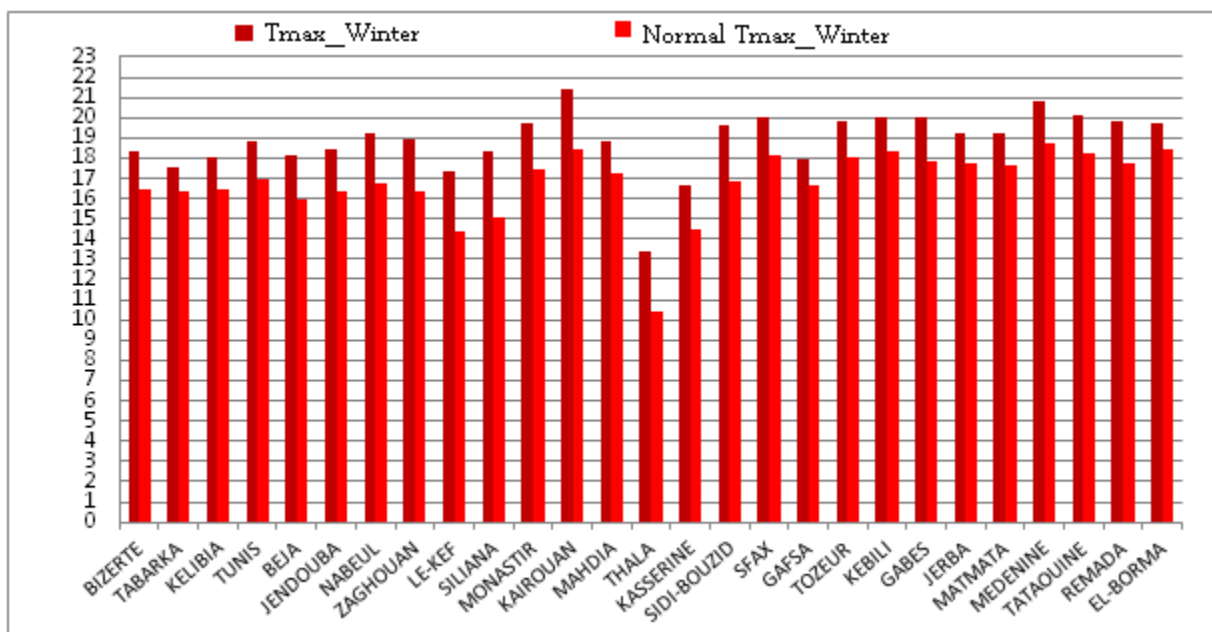
Monthly temperature averages



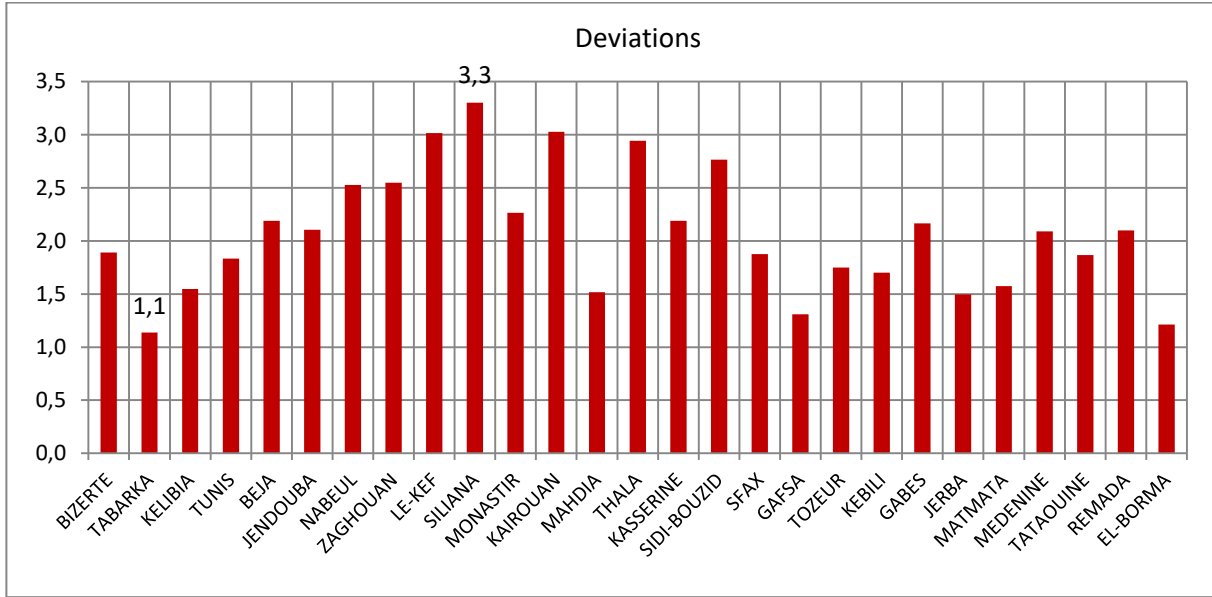
Differences between the monthly averages and normals

- Maximum temperature:

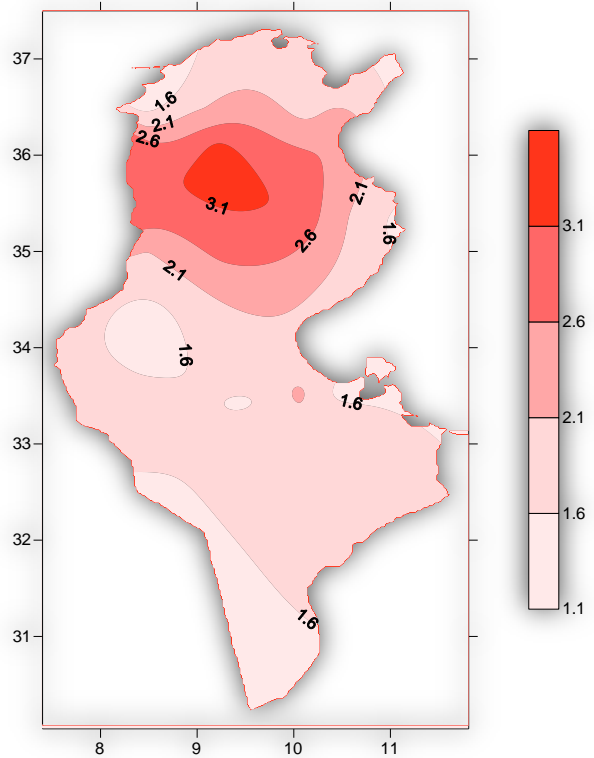
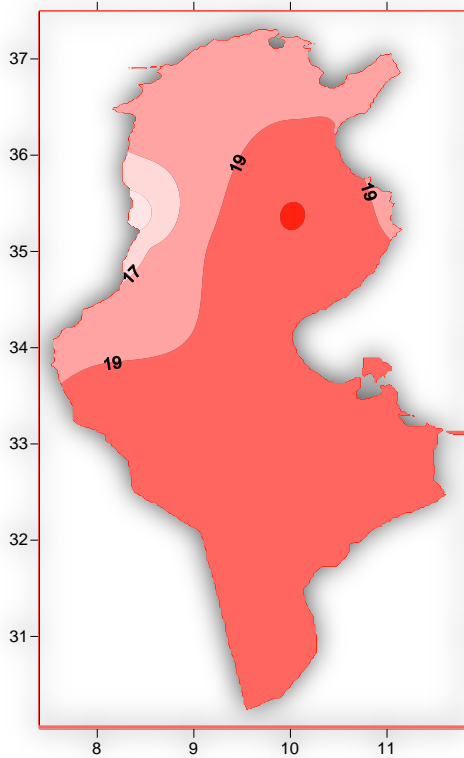
The seasonal averages of the daily maximum temperature exceeded the normal with positive deviations ranging from +1°C in Tabarka to +3.3°C in Siliana.



Comparison of seasonal averages of maximum temperature to winter normals (1991-2020)

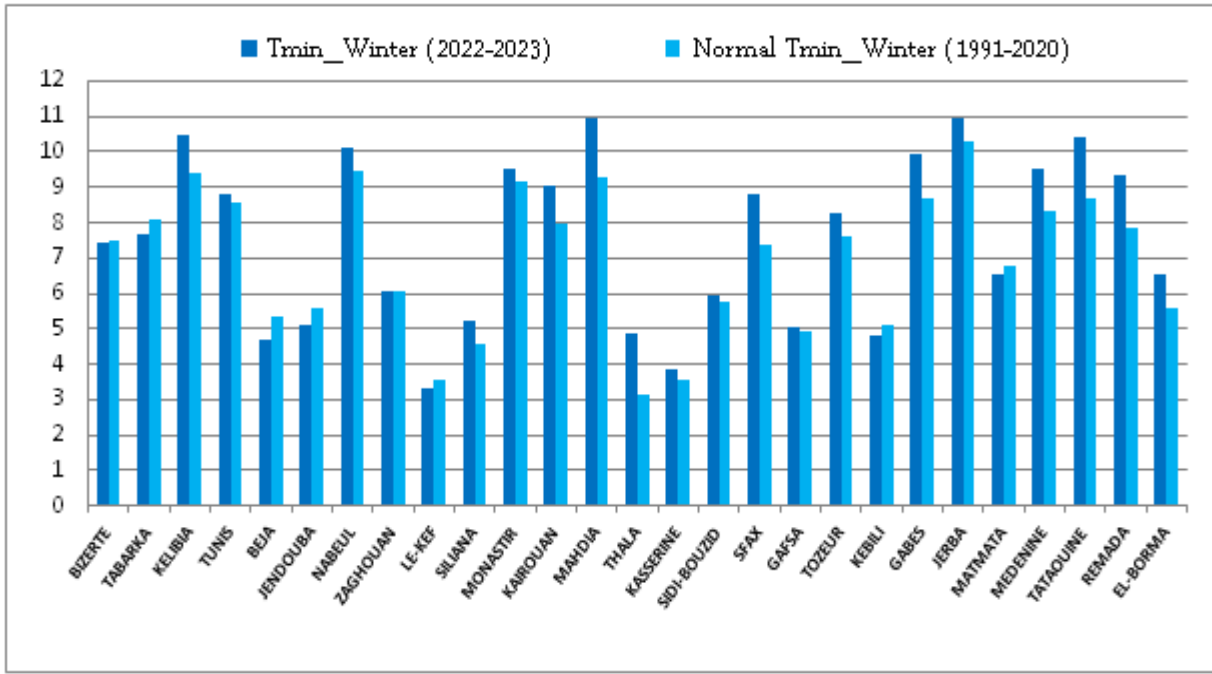


*Deviation from the reference seasonal average (1991-2020)
daily maximum temperature averages for winter 2022-2023*

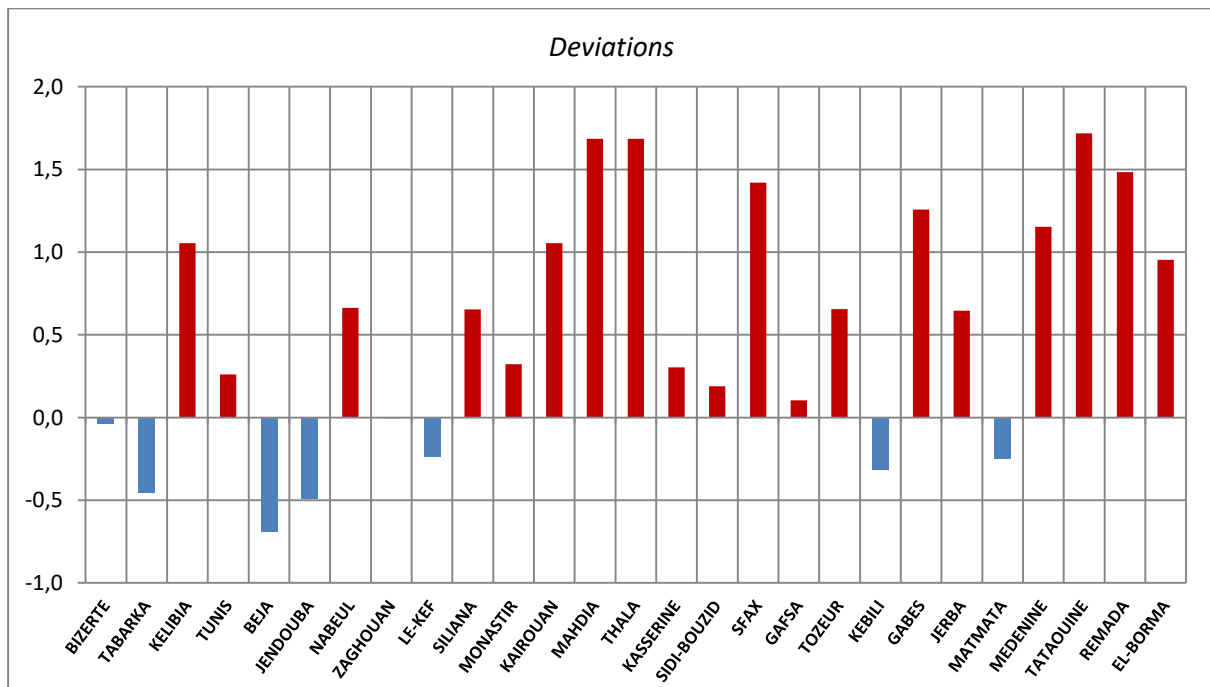


- Minimum temperature:

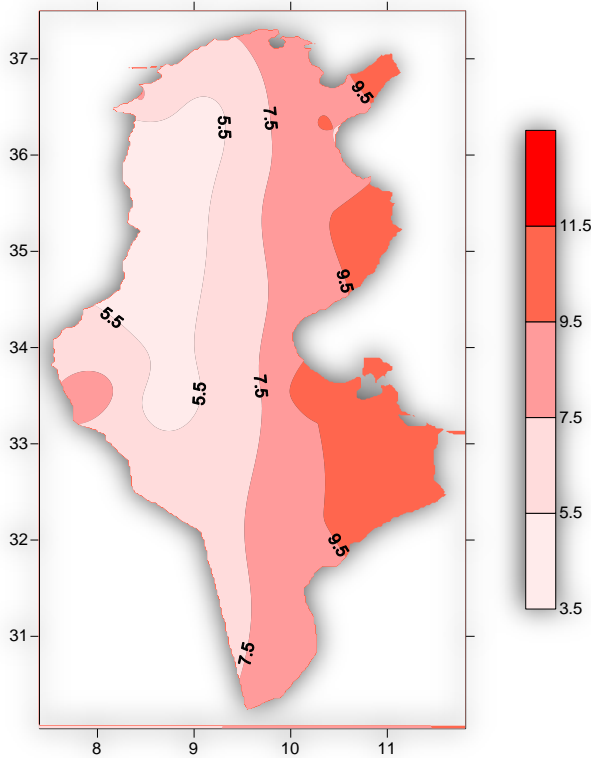
The monthly averages of the daily minimum temperature of different regions varied between 3.3°C in Kef and 11°C in Jerba and the deviations from normal varied from -0.7°C in Beja to 1.7°C in Mahdia, Thala and Tataouine.



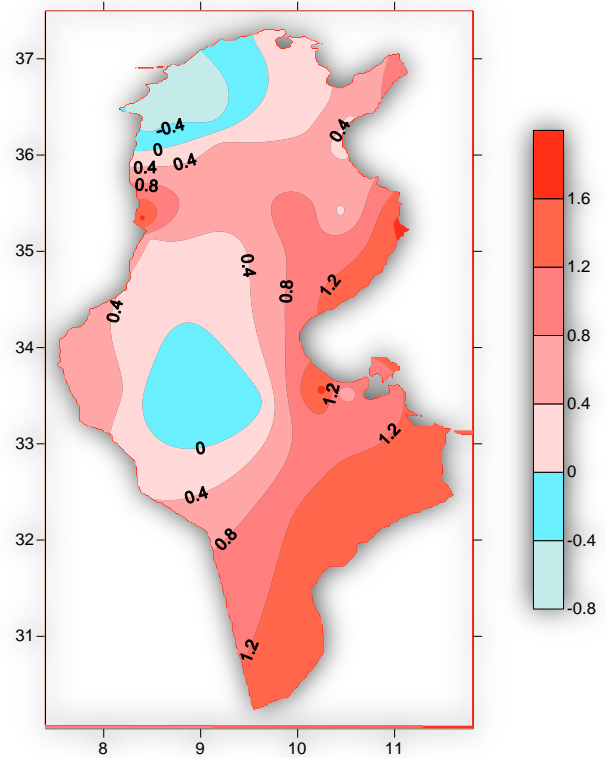
Comparison of average minimum temperatures to seasonal normals



Deviation from the reference seasonal average (1991-2020) average winter minimum temperature 2023



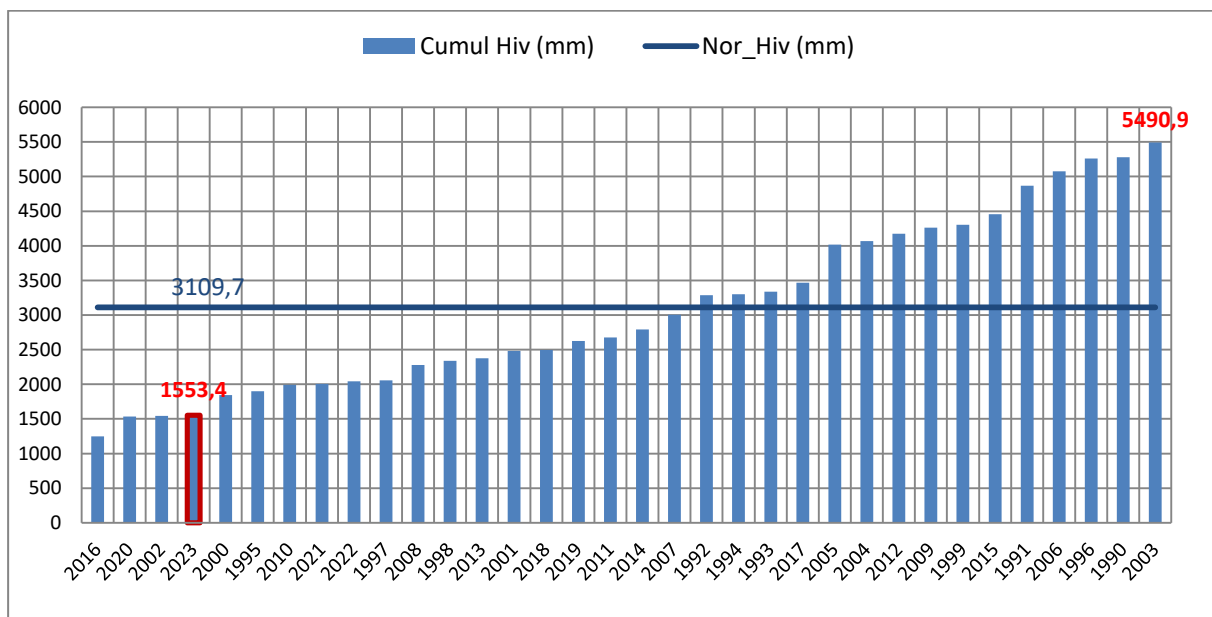
(2022-2023) Winter minimum temperature (°C)



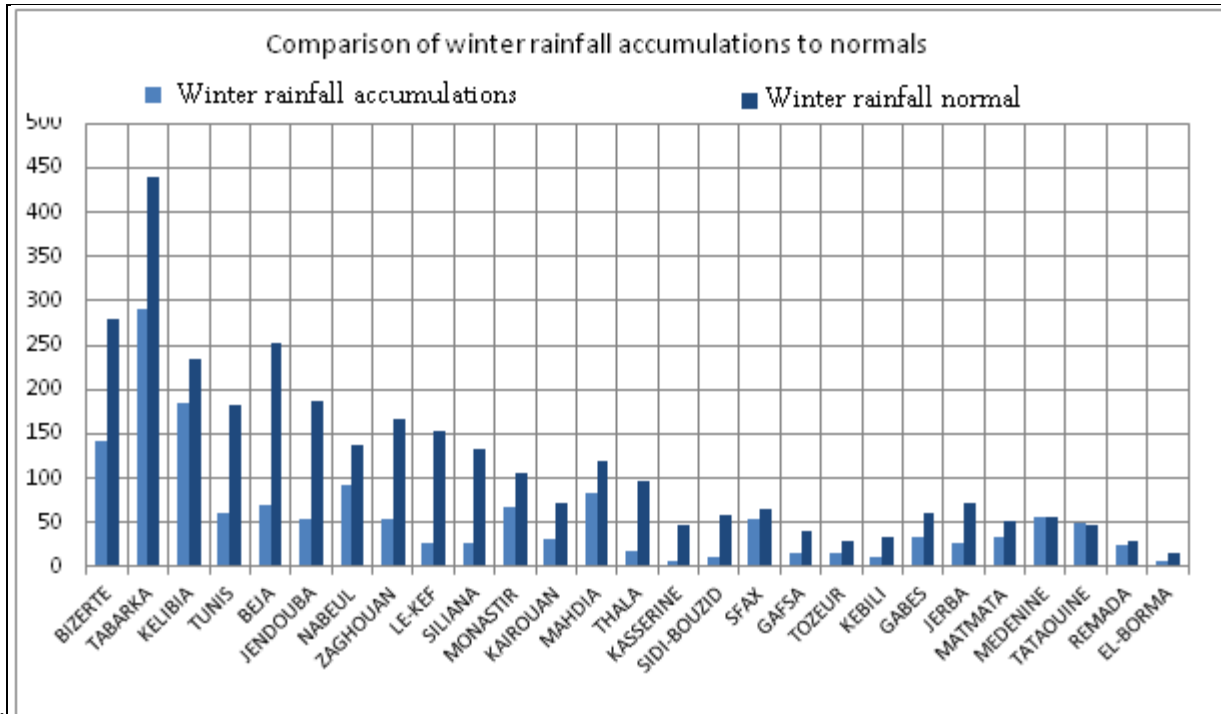
Deviation from the seasonal average of Tmin (°C)

- Rainfall:

The total seasonal accumulation of rains from the 27 main stations reached 1553.4 mm and only represented half of the reference seasonal accumulation of the same stations (3109.7 mm), the deficit affected almost all of our regions.

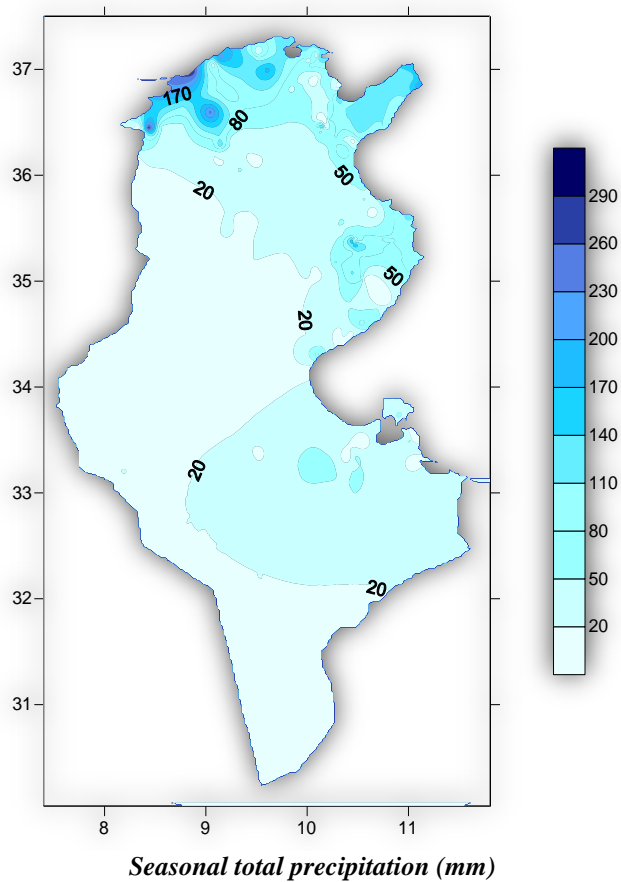


Seasonal totals of the main stations per year

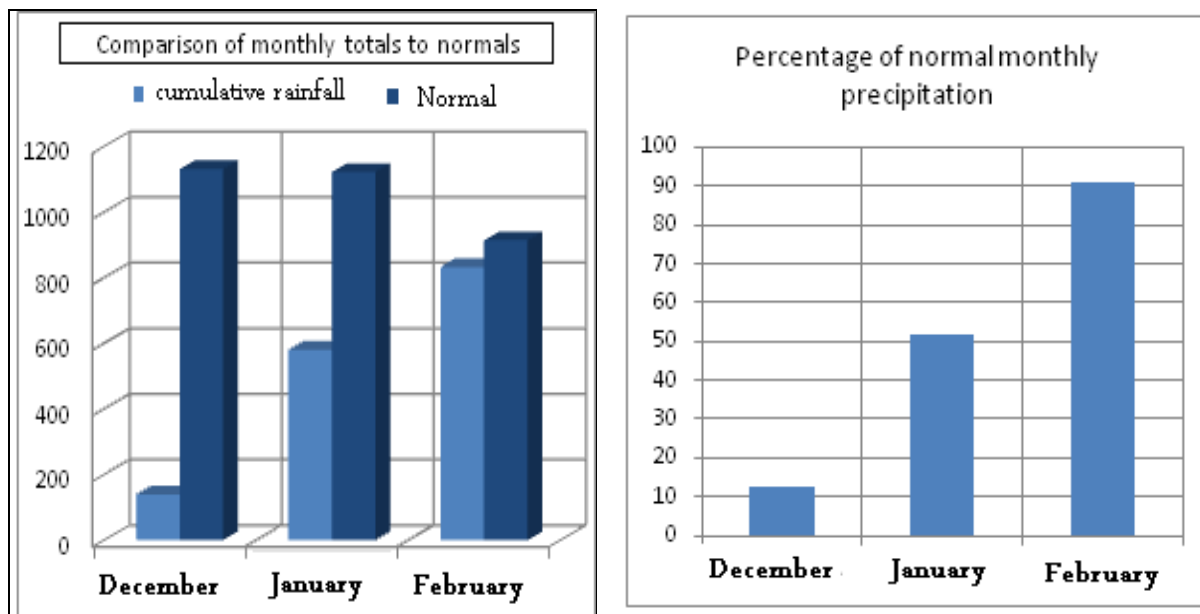


Comparison of winter (2022-2023) precipitation totals compared to reference averages:

- Geographical distribution of winter rainfall (2022-2023):



On monthly scale, all the months of the season were short of rain, especially the month of december which was practically dry.



- The winds :

As for the winds, they were generally light to moderate.

In December, the wind speed increased during the days of the 9th and 10th of the month in most regions and the maximums varied from 60 km/h in Kébili to 97 km/h in Tabarka, reaching 104 km/h in Thala and 126 km/h Zaghouan. The wind speed also increased on the 14th of the month in the northern regions and its maximum speed varied between 60 km/h in Kélibia and 83 km/h in Bizerte.

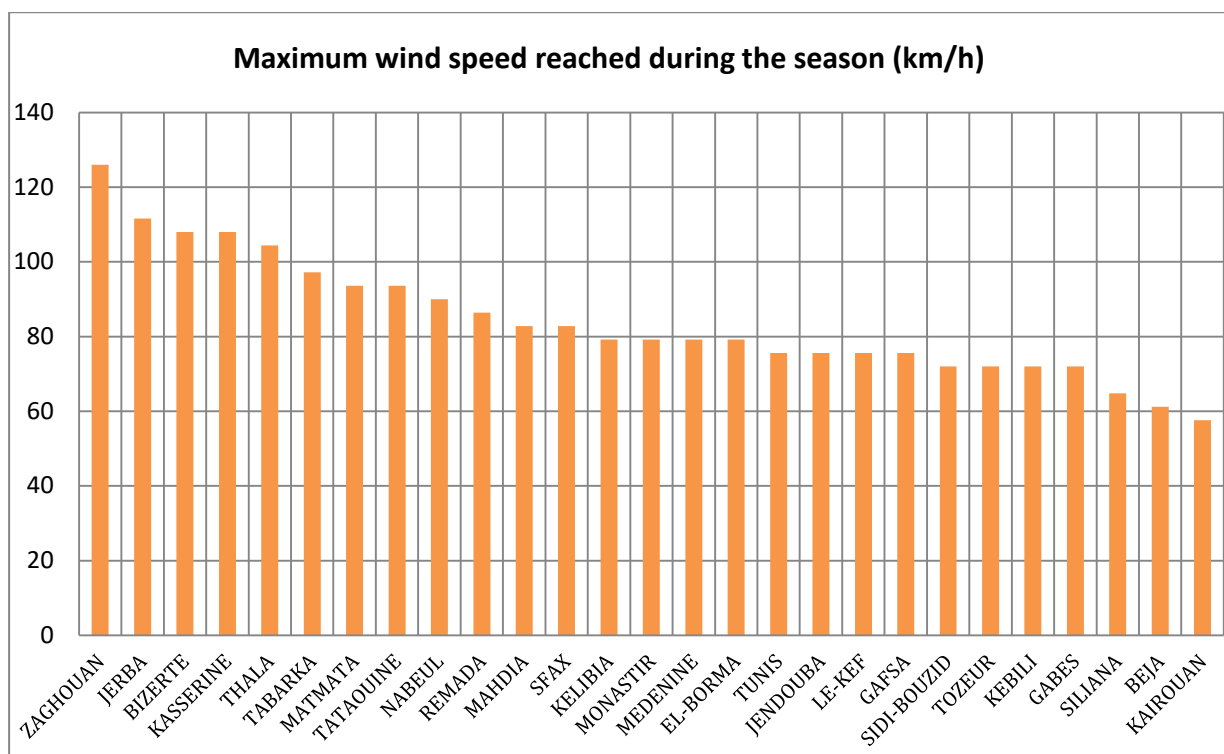
During the month of January, the winds were strong during the days of the 9th and 10th of the month in the northern and central regions and locally in the south and the maximum speeds varied between 65 km/h in Mahdia and 79 km/h in Kelibia. The period from January 17 to 20 was characterized by strong winds in most regions and the maximum speed varied from 61 km/h in Beja and El Borma to 94 km/h in Beja and Tataouine and it reached a maximum of 108 km/h in Bizerte on the 19th of the month. These strong winds caused sand phenomena in the southern regions. Winds were strong on January 27 in the Nabeul and Kasserine regions with maximum speeds between 60 km/h and 80 km/h, reaching a maximum of 108 km/h in Kasserine.

During the month of February, the speed increased on February 05, 2023 on the heights of the center-west, reaching a maximum of 76 km/h in Kasserine.

During the period from February 8 to 10, the winds were strong in most of our regions and their maximum speed varied from 60 km/h in Zaghouan and Béja to 83 km/h in Mahdia, Sfax and Tataouine. A maximum of 112 km/h was recorded in Jerba on the 9th of the month and sand phenomena were observed in Tozeur and El Borma. The winds were strong on February 25 in the regions of Nabeul and Kasserine and their maximum speed varied between 60 km/h and 80 km/h and reached a maximum of 108 km/h in Kasserine.

➤ **Figure n°01 et Figure n°02**

- Figure n°01



- Figure n°02

