

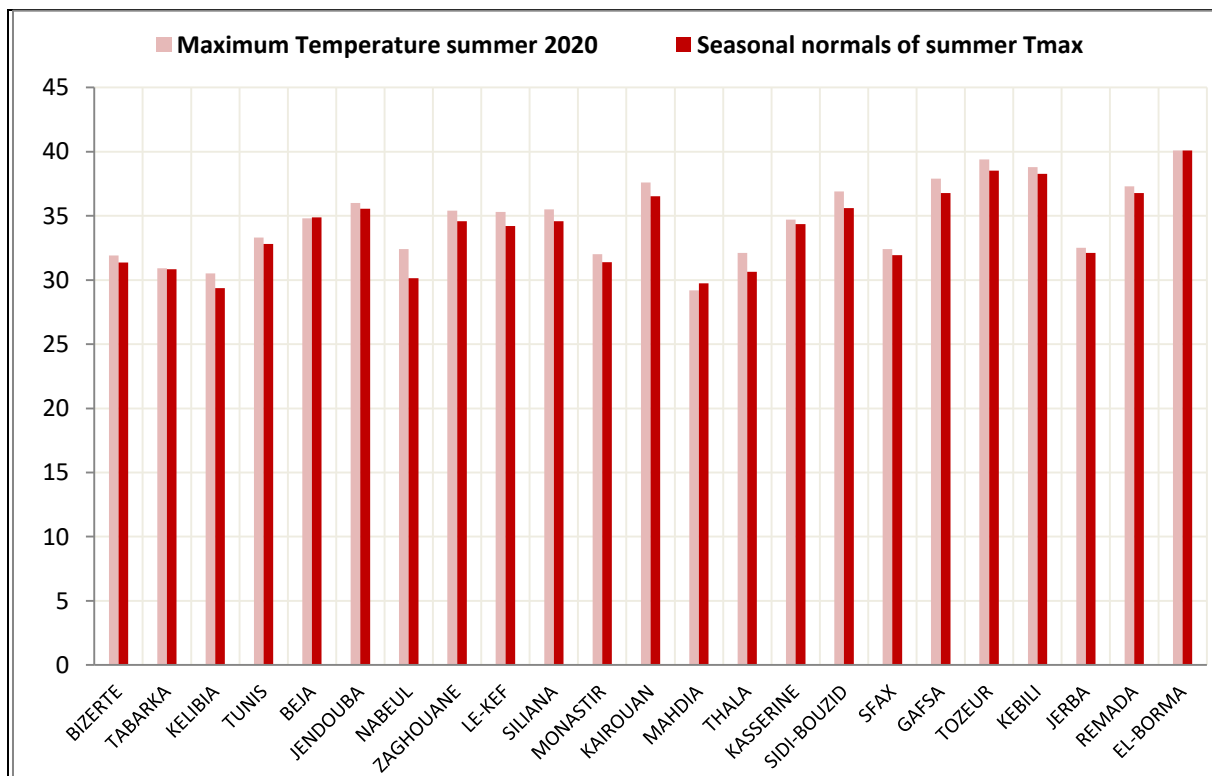
Summer Climate Report 2020 (June – July - August)

The summer of 2020 was marked by a rise in temperature across the country. The average temperature in all the stations and during this summer it reached 27.80 ° C, it was higher than the reference average which reached 27.23 ° C. Thus, the average temperature this summer has exceeded the reference average by a difference of + 0.57 ° C.

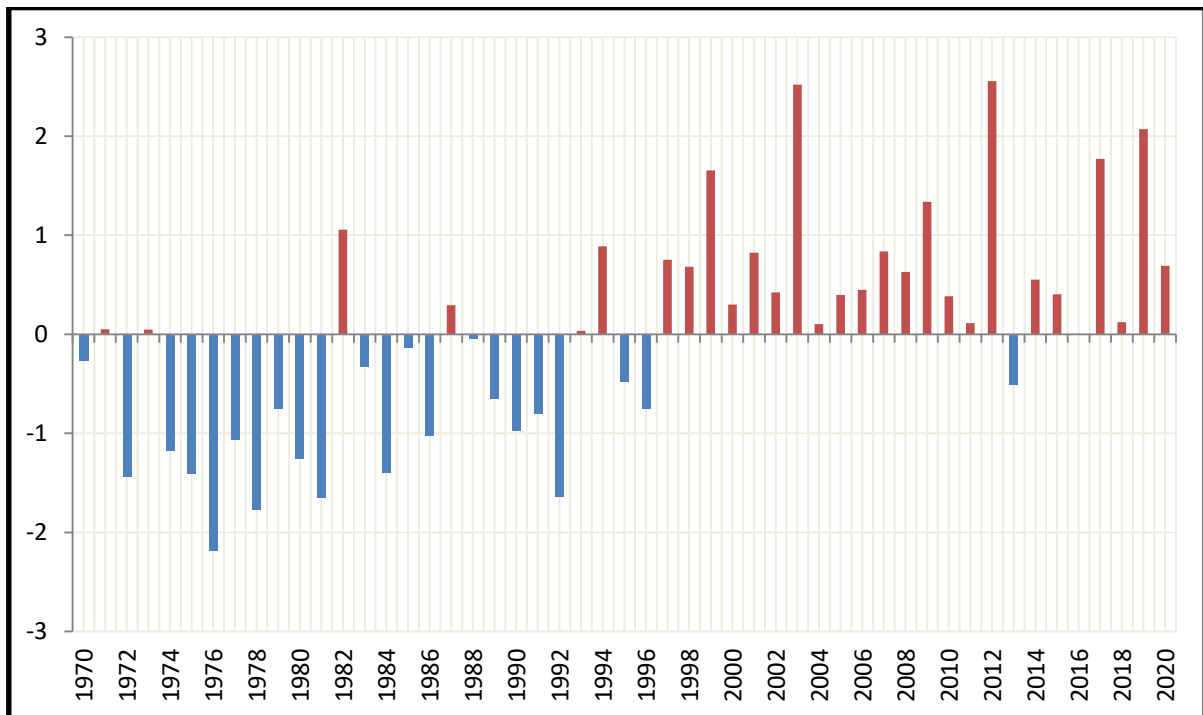
With regard to rainfall, the seasonal cumulative rainfall of summer 2020 at all main stations was 593 mm, it was slightly above the reference normal (563.4 mm) with an excess of 5%.

- Maximum temperature :

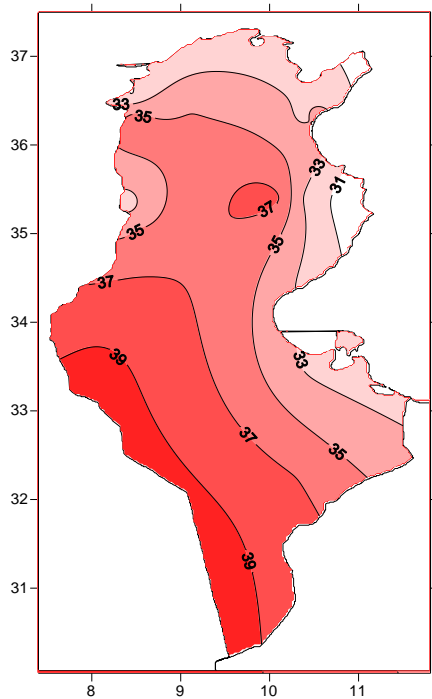
The maximum temperatures of summer 2020 were above seasonal norms at most stations except Beja (-0.08°C) and Mahdia (-0.54°C). As for the general average of the maximum temperature in all stations, it exceeded the reference normal with a difference of + 0.69 ° C.



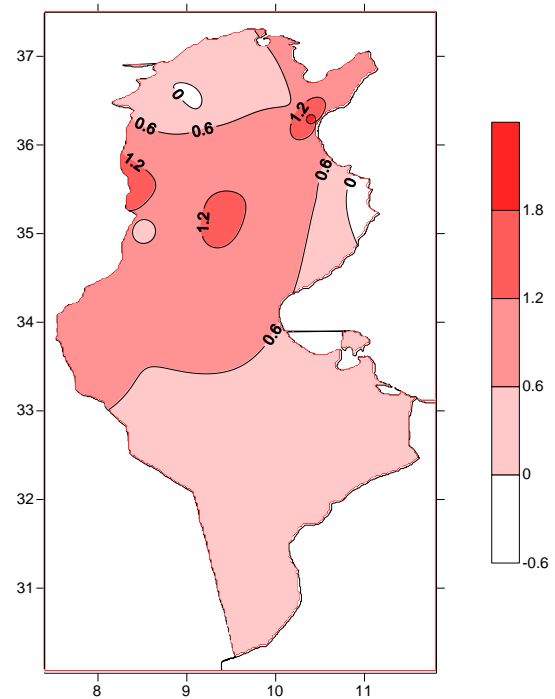
Comparison of maximum and normal temperatures of summer



Deviation from the seasonal reference average (1981-2010)
maximum temperature (summer 1970 to 2020)



Maximum temperature (° C) of summer 2020

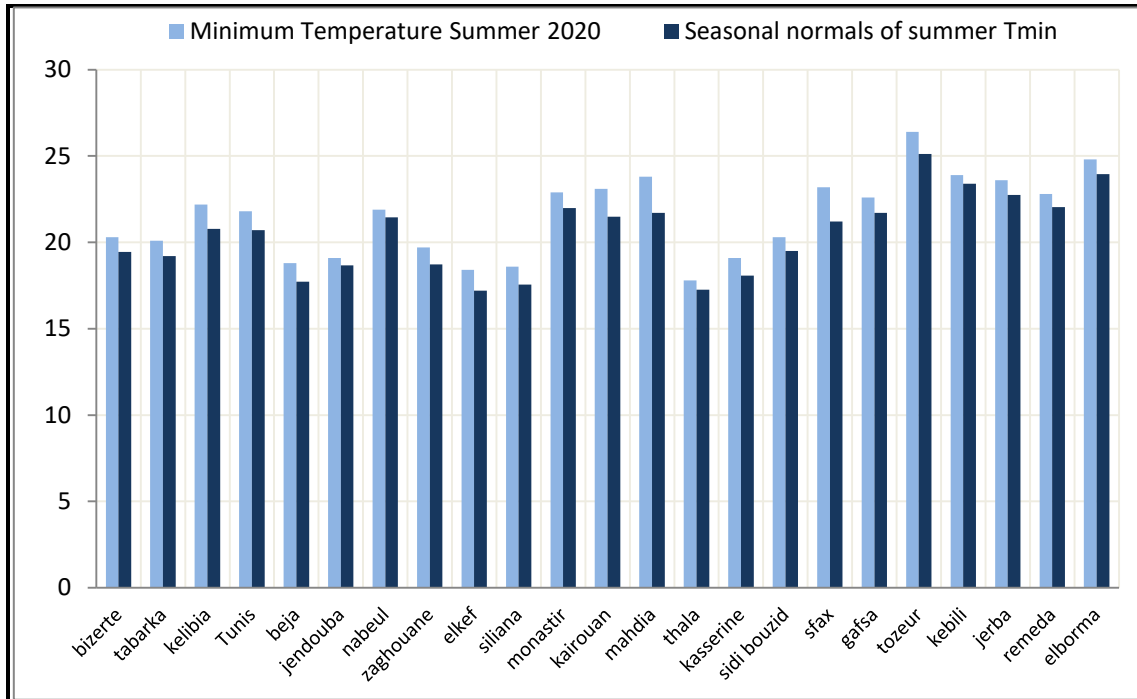


Deviation from the seasonal average of Tmax (° C)

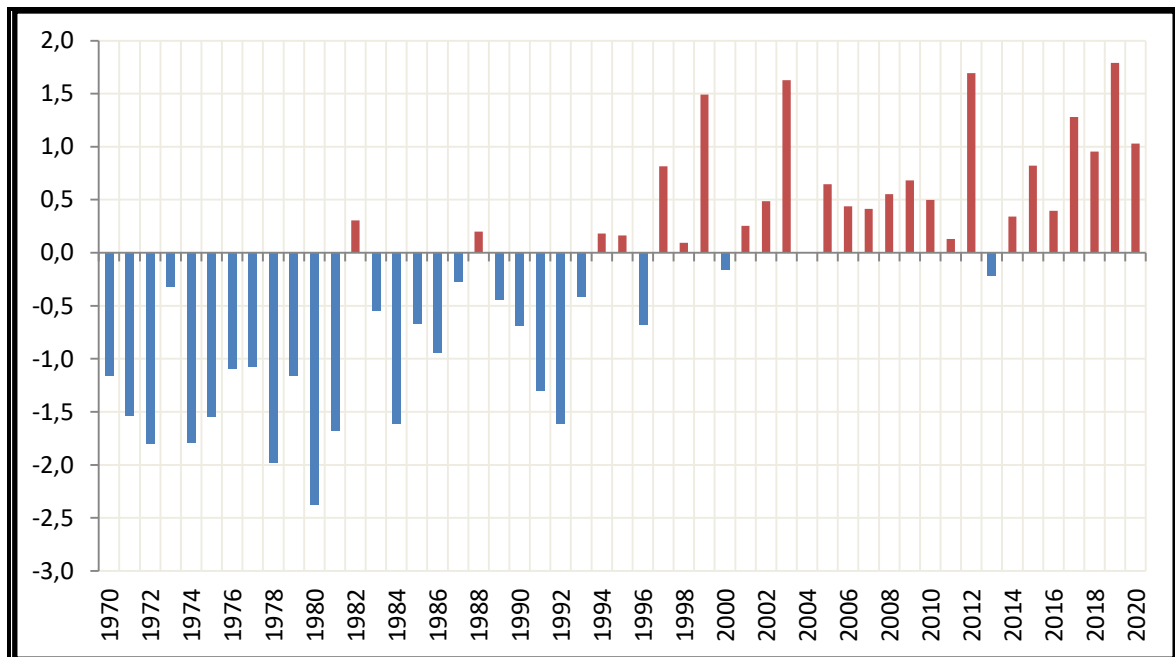
- Minimum temperatures:



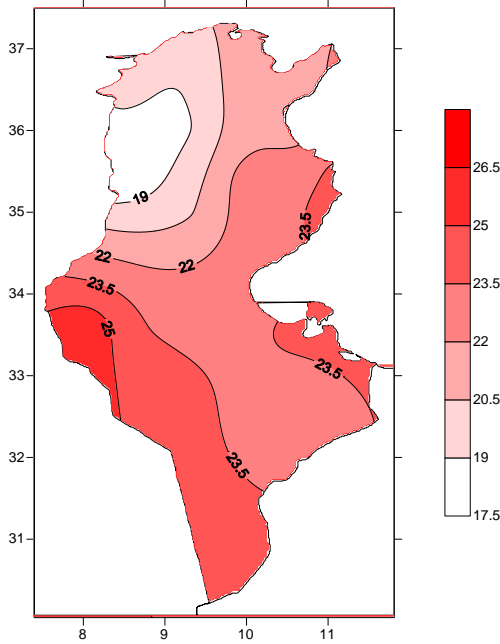
The summer 2020 minimum temperatures at all stations exceeded the seasonal reference averages and the range ranged from 0.43 to 2.1 ° C. On average throughout Tunisia, the minimum temperature was above normal by **1.02 ° C**.



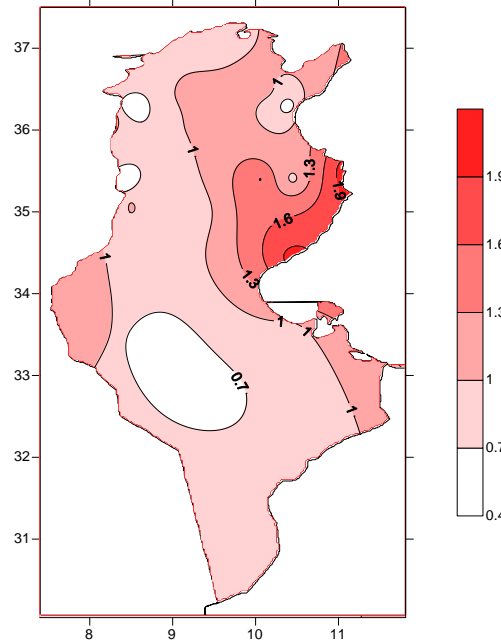
Comparison of summer 2020 minimum temperatures to summer norms (1970 to 2020)



Deviation from the seasonal reference average (1981-2010) minimum temperature (summer 1970 to 2020)



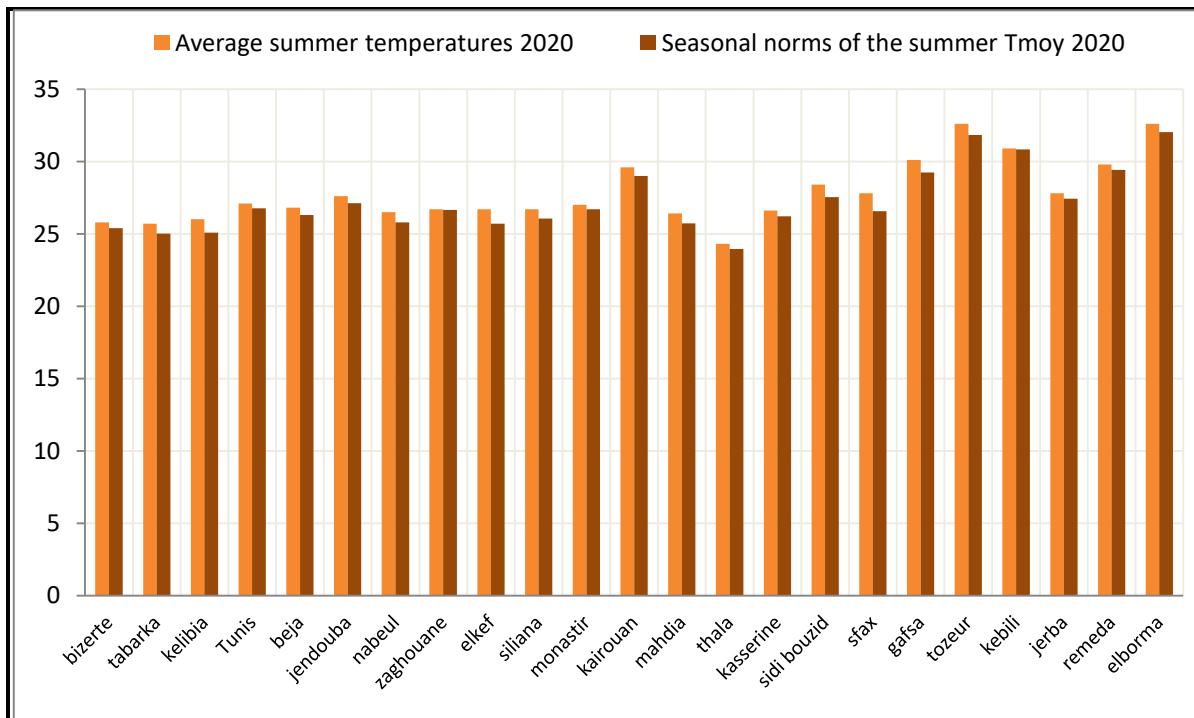
Average minimum temperature (° C) of summer 2020



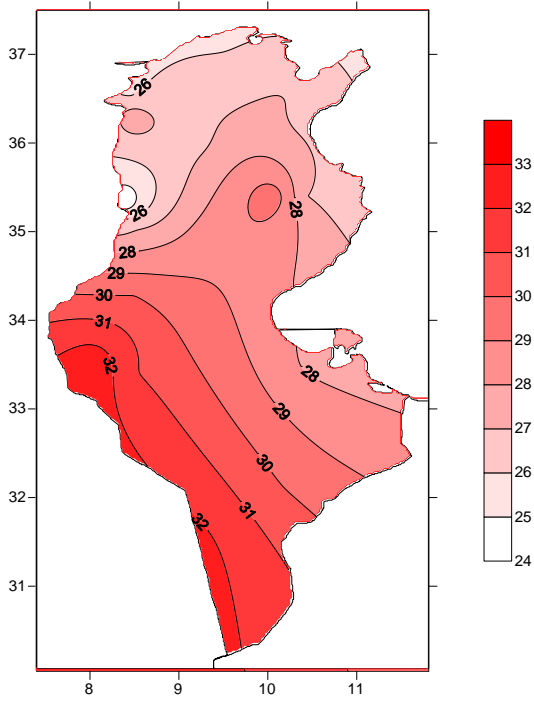
Deviation from the seasonal mean of Tmin (° C)

- Mean temperature :

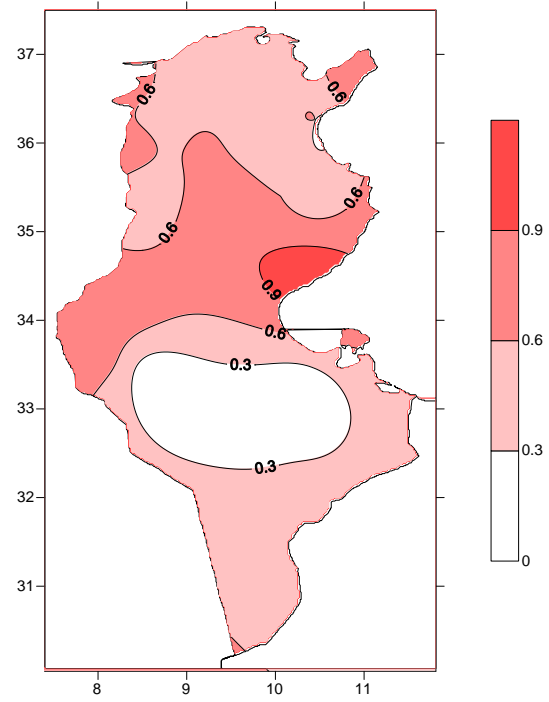
Average temperatures were above normal at all stations. They varied between 24.3°C in Thala, and 32.6°C in El Borma. The averaged temperatures over the whole of Tunisia during the summer were 27.80 ° C while the normals for the same stations are 27.23 ° C. As a result, average temperatures during this summer were above normal by **0.57 ° C**.



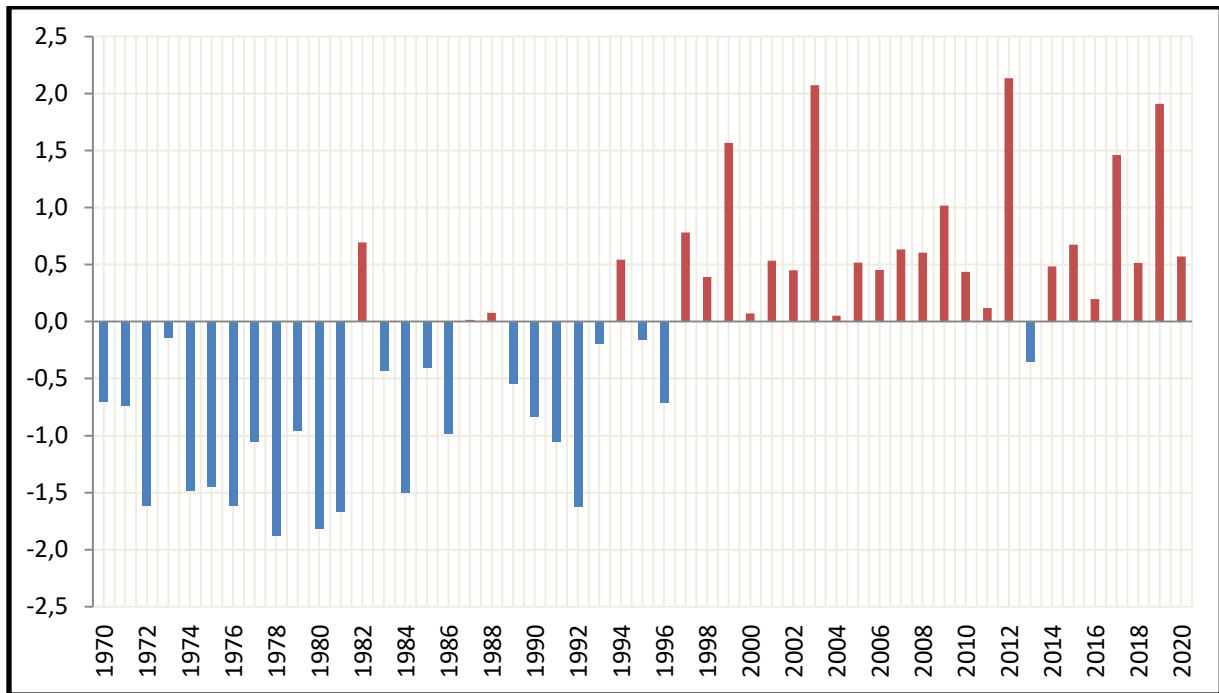
Comparison of average and normal temperatures for summer



Average temperature ($^{\circ}$ C) of summer 2020



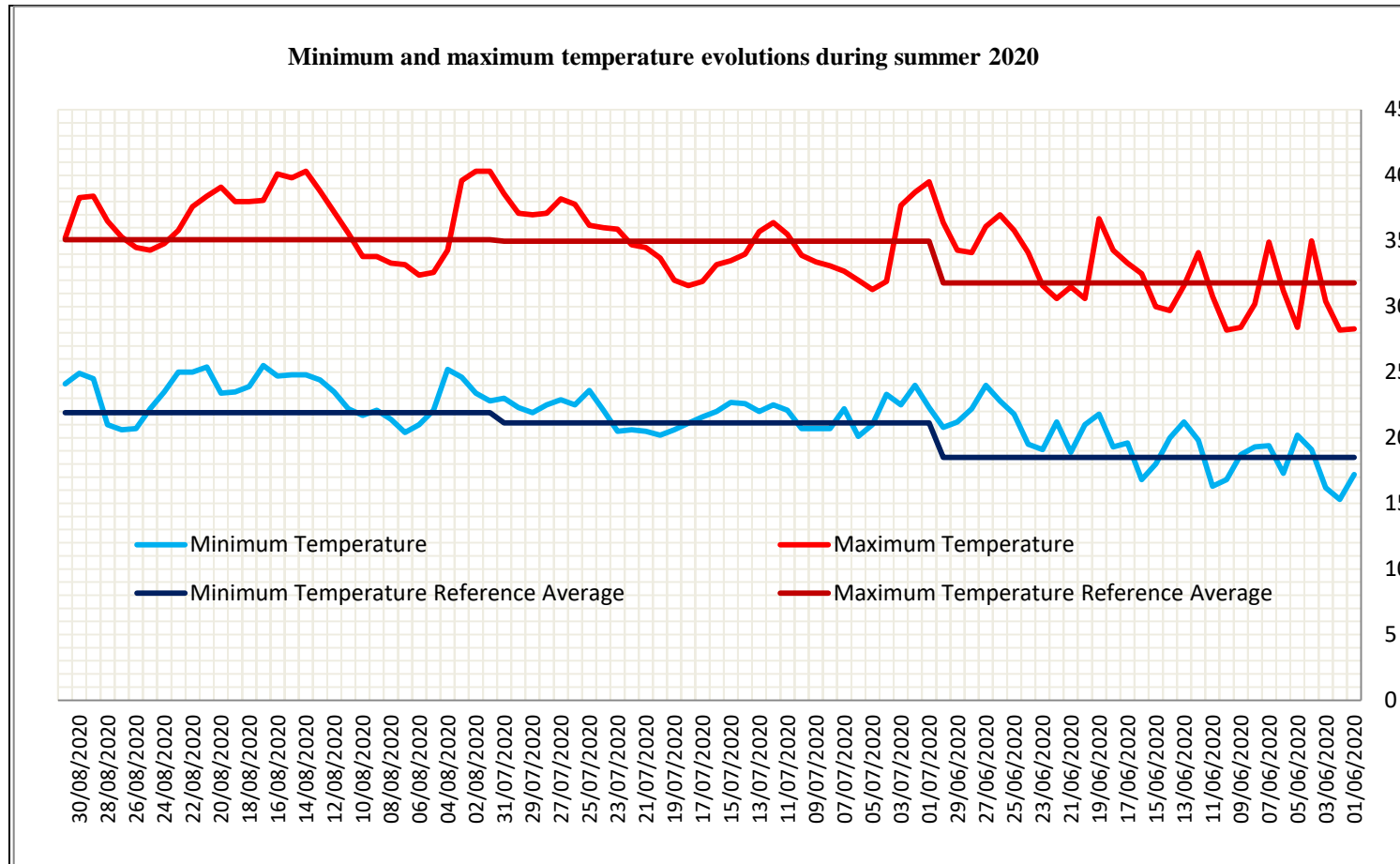
Deviation from the seasonal mean of T_{moy} ($^{\circ}$ C)



Deviation from the seasonal reference average (1981-2010)
average temperature (summer 1970 to 2020)



Evolution of daily minimum and maximum temperatures during summer 2020



Maximum and minimum temperatures were mostly above normal at most stations, especially in southern regions. The frequency of hot days as well as hot nights was very important during the month of August 2020.

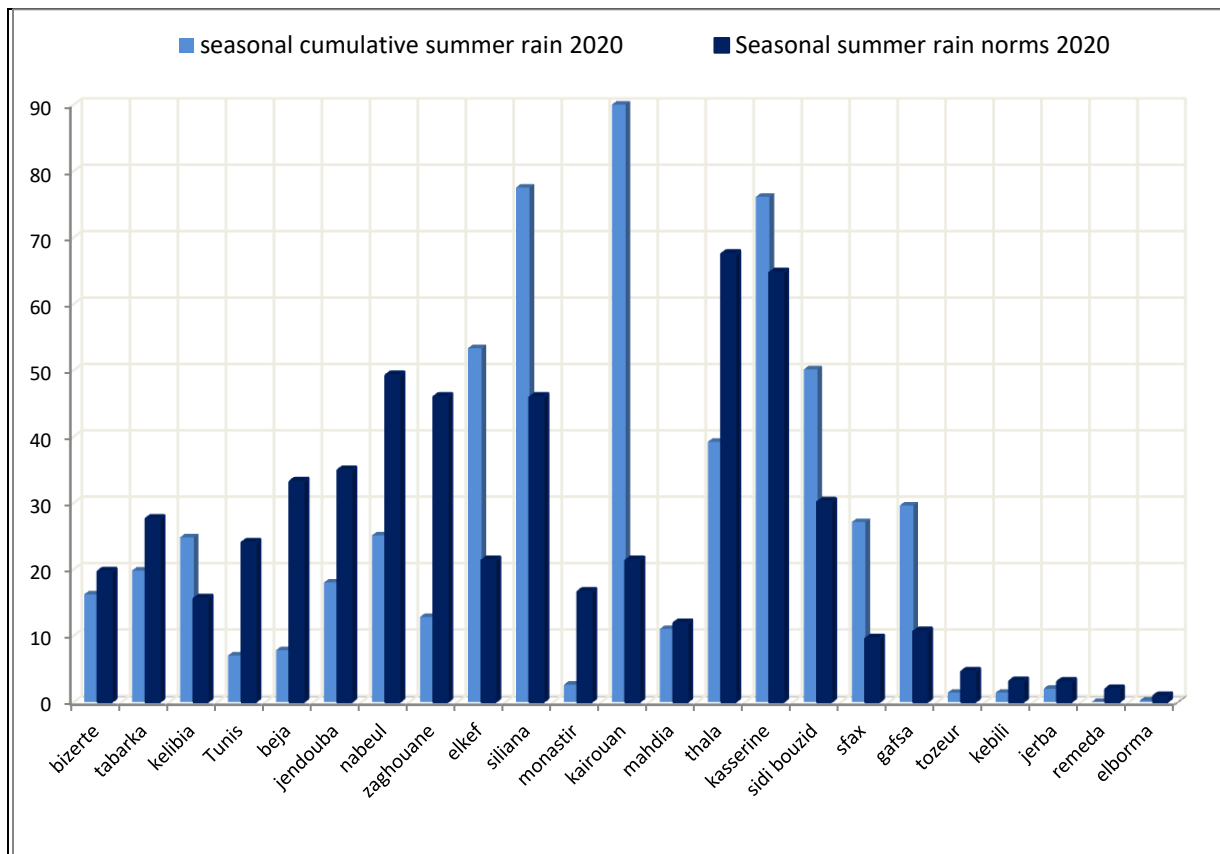


- Rainfall:

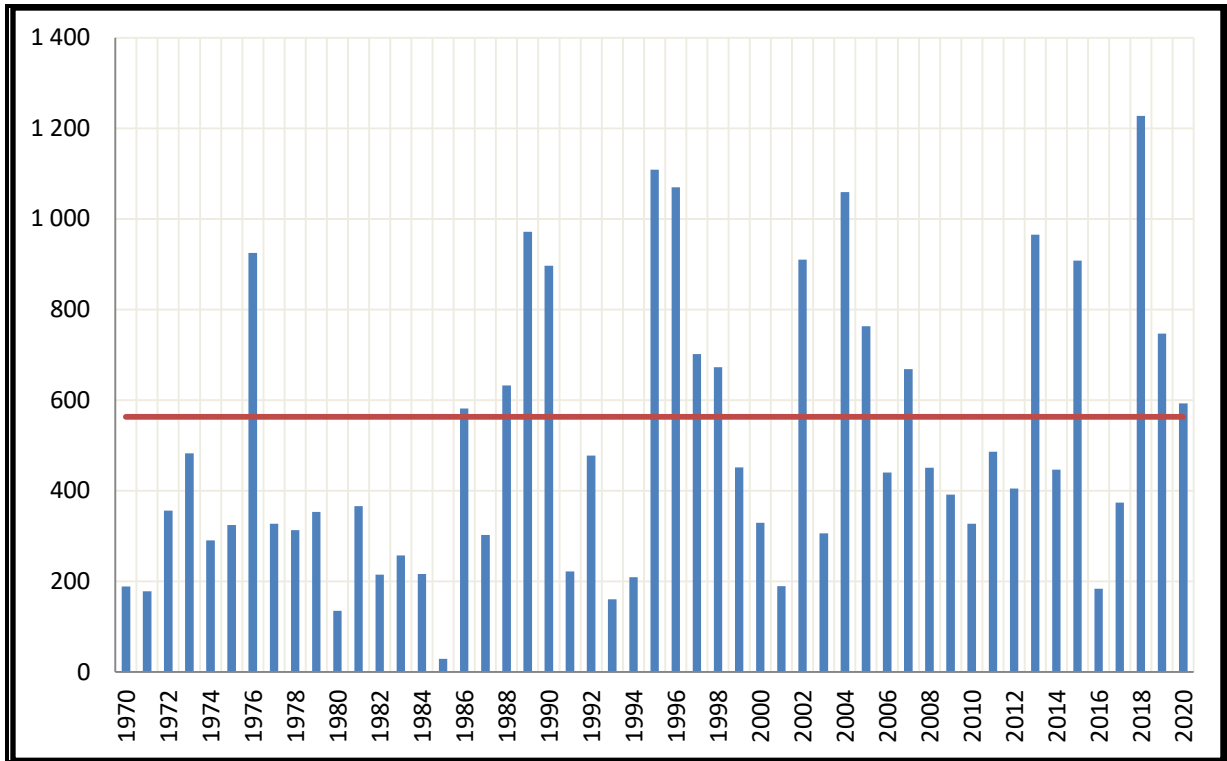
The summer of 2020 was characterized by disturbed passages several times in a few regions, in particular during the months of June and July. The rains were temporarily intense and in significant local quantities in June; signaling that we recorded a new record for monthly cumulative rainfall in Kairouan, which reached 85.6 mm, while the old one was 57.2 mm on June 1961.

In July, a new record of daily rainfall of 27.1 mm was recorded in Gafsa on July 18, 2020, and the old daily record reached 19.5 millimeters on July 2, 1951.

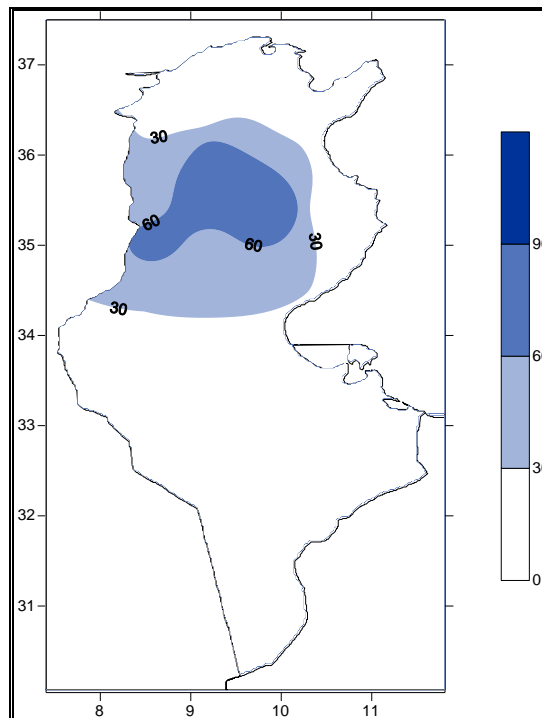
As for the seasonal cumulative rainfall recorded in all main stations during the summer of this year, it reached 593 mm, exceeding the seasonal cumulative reference (563 mm) and the excess was **5%**.



Comparison of seasonal rainfall amounts
compared to the cumulative reference averages: summer 2020



Seasonal rainfall accumulation (mm): summer 1970 to 2020



Seasonal rainfall accumulation (mm): summer 2020



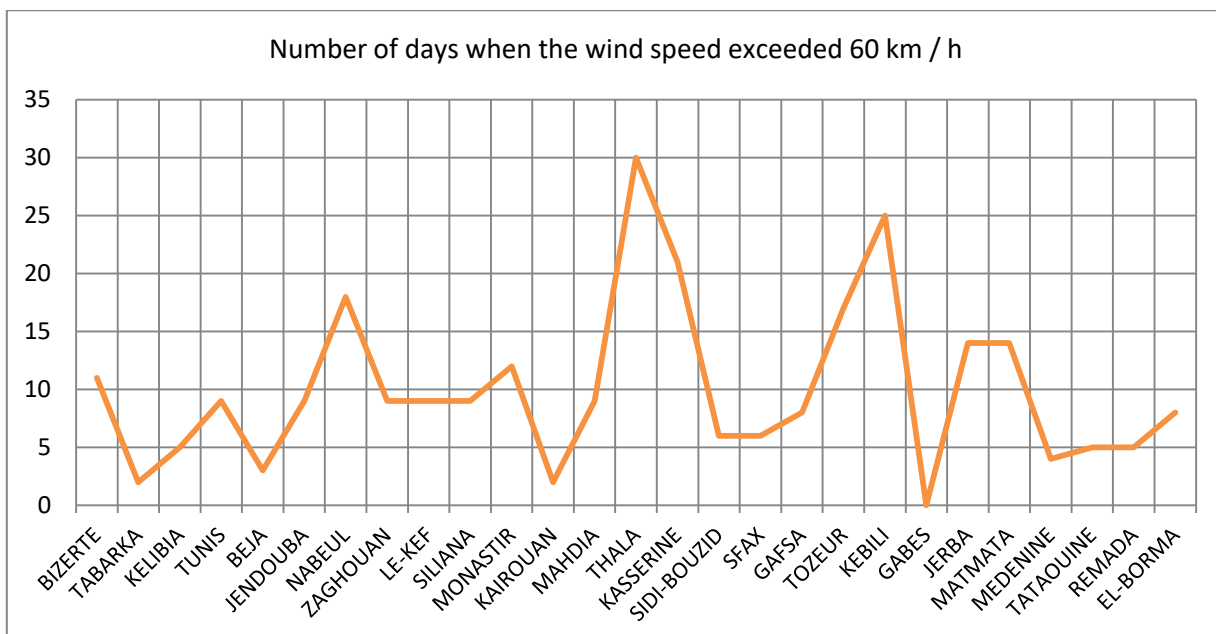
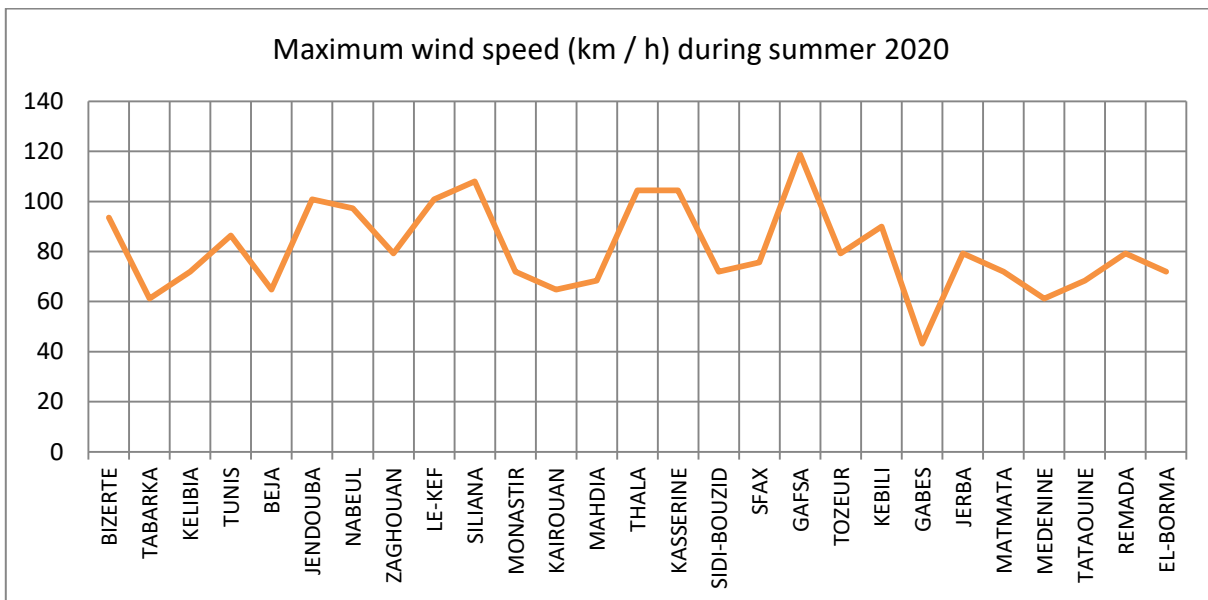
THE WINDS :

Winds were generally light to moderate, but their speed increased on certain days of the three months of the summer season and the maximum varied between 60 and 97 km / h.

The maximum speed exceeded 100 km / h and reached 101 in Kef on June 01, 104 km / h in Thala and on June 25, 2020.

In July, the maximum speed reached a peak of 101 km / h in Kasserine on the 15th of the month, on July 18 the wind speed reached 119 km / h in Gafsa.

In August, the maximum wind speed reached 108 km / h in Siliana on August 16 and 101 km / h in Thala on August 28 and Jendouba on August 29, 2020.



The summer climate report per month:

1- June :

- Temperature :

Maximum temperatures varied from 28 to 33° C over the northern regions, coastal areas and mountainous regions, and they were between 35 and 39° C over the rest of the country except in El Borma, where it reached 43° C. The maximum temperatures exceeded the reference normals in most regions with a variation ranging from 0.1 to 1.9 degrees except the regions of Tabarka, Mahdia and Kasserine, where they were slightly lower and the deteriorated difference of -0, 5 to -1.1 ° C. Note that the absolute maximum temperature reached **46.6 ° C in Medenine on June 19, 2020.**

As for minimum temperatures, most of their averages were above reference normals and ranged from 15 to 20 ° C over the northern and central-western regions, including the highlands, and they were between 23 and 27 ° C in the rest of the country, the difference in minimum temperatures to the reference normals ranged from 0.1 to 3.1 ° C. We also note that the absolute minimum temperature reached a score of 10.1 ° C and that was in Beja on June 2, 2020.

Concerning the average temperature for the month of June 2020 on all the main stations, it reached 27.2 ° C exceeding the monthly reference average (26.3 ° C) with a difference of + 0.9 ° C.

- Rainfall:

Compared to monthly norms, the monthly cumulative rainfall recorded during the month of June 2020 has increased in Tabarka, Le Kef, Siliana and in the central regions, where we have recorded local rains in significant quantities, with a monthly total of 117 mm in Ain Jeloula and 85.6 in Kairouan (a new record in Kairouan since June 1963 when the monthly total was 53.3 mm), 68 fractures and 50 mm in Kasserine, and the surplus varied from 7 % in Kef to 968% in Kairouan. As for the rest of the regions, despite the increase in the monthly total in most regions compared to the previous year, it experienced a remarkable drop due to the reference rates, ranging from 6% in Bizerte to 100% in the regions. from South.

Note that during the month of June 2020, the rains did not fall throughout the month in Gabès, Tozeur and Kébili, Médenine and Tataouine.



2- July :

- Temperature:

On July 2020, most parts of the country experienced relatively warm temperatures compared to the month's benchmark averages.

The general mean maximum temperature was 35.05°C and close to the reference mean (35.04°C). As for the average minimum temperature in all regions reached 21.92°C , slightly exceeding the reference averages with a deviation of $+0.71^{\circ}\text{C}$. However, the average temperature reached 28.5°C at all approved main stations, exceeding the overall average by $+0.35^{\circ}\text{C}$.

- Rainfall:

Despite the varied distribution of precipitation from region to region, which mainly included mountainous and adjacent regions where rainy thunderstorm clouds formed due to high temperatures during the month of July 2020; the month was generally considered rainy and the monthly cumulative reached 119 mm, while the benchmark mean monthly cumulative for the same stations was 86 mm and the surplus was 39%.

3 – August :

- Temperature:

During the month of August 2020, the temperature increased significantly in most regions and our country has known the emergence of three heat waves. The maximum temperature exceeded the reference averages in all stations except Beja where it was below average with a decrease of (-0.91°C) and the average maximum temperature was 36.67°C and exceeded the baseline mean with a difference of 1.61°C . A new maximum temperature record of 43°C was recorded in Kasserine on August 20, 2020 (the last record of 42.5°C was recorded on August 02, 2005).

As for the minimum temperature on August of this year reached 23.27°C and it exceeded the reference average of the month (21.9°C) on all stations and the difference reached $+1.39^{\circ}\text{C}$. August 2020 was rated the **third** hottest month since 1970.

Average temperatures ranged from 26.30°C to 34°C in Tozeur and the general average temperature over all the main stations was 29.61°C and it was 1.14°C above the reference average. This made August 2020 the **7th hottest month** of August in the past fifty years.

- Rainfall:

As for the rains, August was in deficit and the decrease in the total amount of monthly rains was **50%**.
