

Hungarian climate report for Summer season 2011

June 2011

Temperature

This year's June was warmer and slightly drier than usual. On *Figure 1.* can be seen that in most parts of the country the average monthly temperature exceeded 20 °C, and along the Tisza in the Great Plains region the values approached 22 °C. At the western part of the country slightly milder weather prevailed. At the higher areas the temperature was below 18 °C with the lowest values below 15 °C in the Mátra and Bükk mountains.

Középhőmérséklet, 2011. június
Mean temperature, June 2011

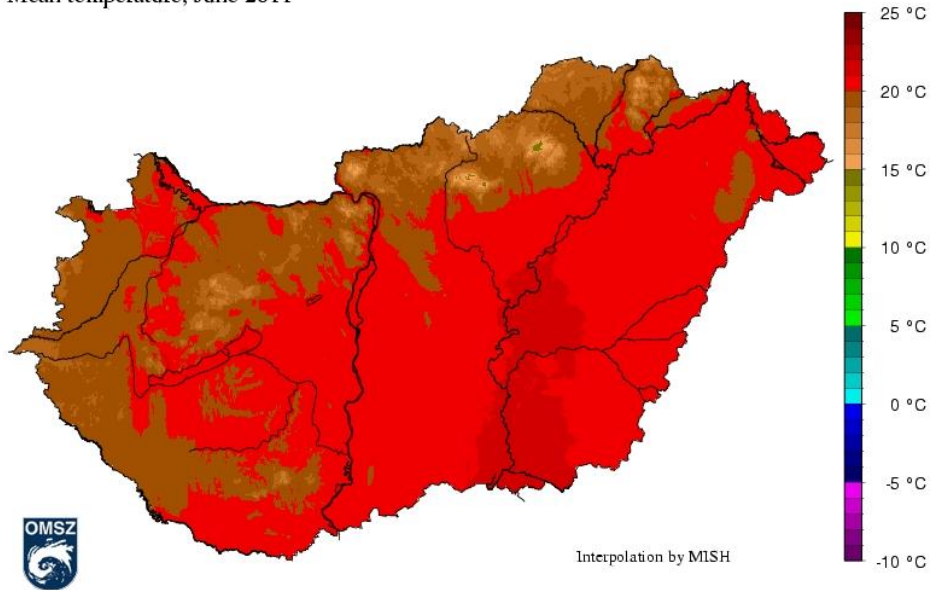


Figure 1. Mean temperature, June 2011.

Középhőmérsékleti anomália az 1971-2000 átlaghoz viszonyítva, 2011. június
Temperature anomaly relative to 1971-2000, June 2011

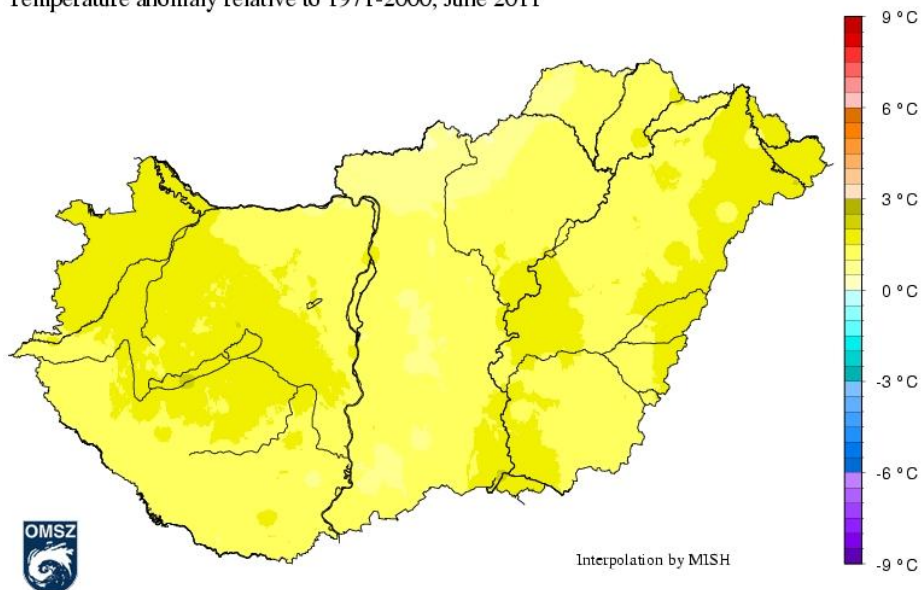


Figure 2. Temperature anomaly relative to 1971-2000, June 2011.

On *Figure 2*. it can be seen that the whole country has proved to be warmer in June this year, the vast majority of the anomalies values was between +0.5 and +2 °C.

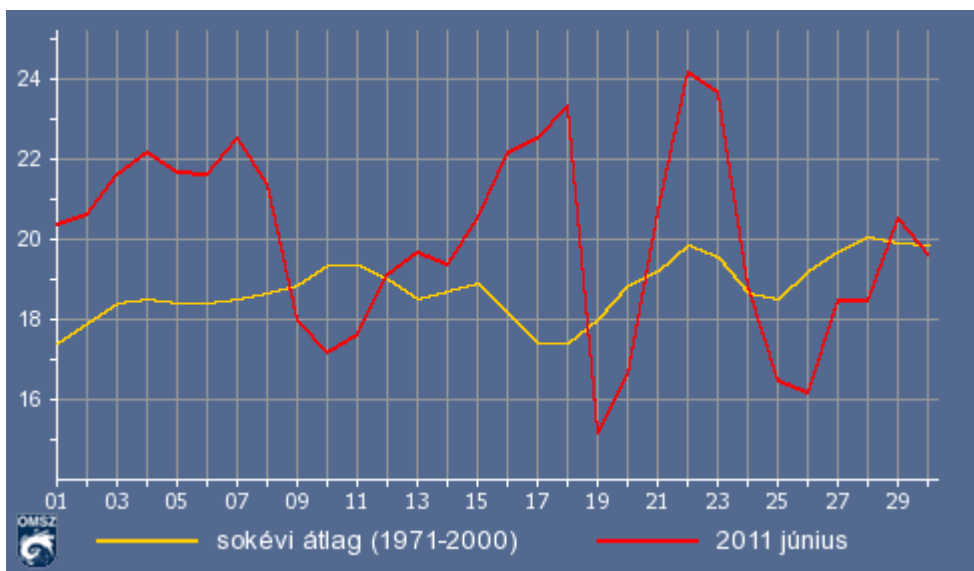


Figure 3. Daily mean temperatures in June 2011. (yellow-climate, red-June 2011)

The national average of daily mean temperature heavily fluctuated around the climate values. The most intense cooling occurred between the 18th and 19th of June when as a result of a cold front passing over the average temperature dropped by 8 °C, close to 15 °C. 3 days later the hottest day of the month was measured, when the country wide mean temperature was above 24 °C. We measured the highest temperature of the month (34.4 °C) on this day on our station in Túrkeve.

Highest temperature during June 2011:	34.4 C°	Túrkeve	Jász-Nagykun-Szolnok	22 nd June
Lowest temperature during June 2011:	3.4 C°	Zabar	Nógrád	26 th June

Precipitation

The spatial distribution of rainfall showed a high degree of diversity. (*Figure 4.*) The driest regions were the area around lake Balaton and the south-eastern part of the country. In these regions, in some small areas the monthly amount of precipitation did not even reach 20 mm. In contrast, several regions of the country had higher than 100 mm precipitation.

Csapadékösszeg, 2011. június
Precipitation, June 2011

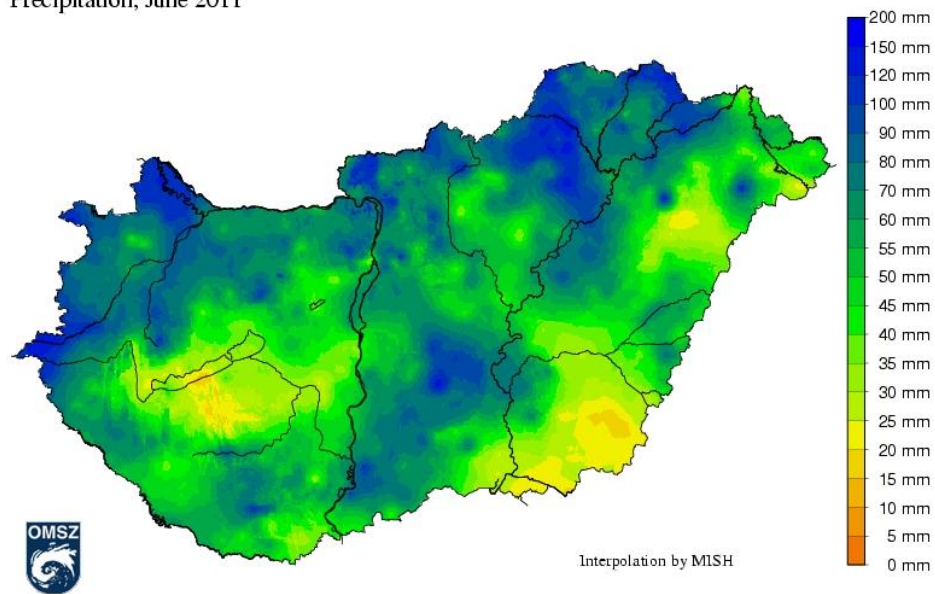


Figure 4. Amount of precipitation, June 2011

The ratio of the monthly rainfall amount and the climatological average (Figure 5.) was widely varied too. The areas with low rainfall had less than half of the average rainfall, at some places not even the quarter of that had fallen. On the other hand the regions with high rainfall had an amount nearly twice of the average.

A csapadékösszeg aránya az 1971-2000 átlaghoz viszonyítva, 2011. június
Precipitation percentage of normal 1971-2000, June 2011

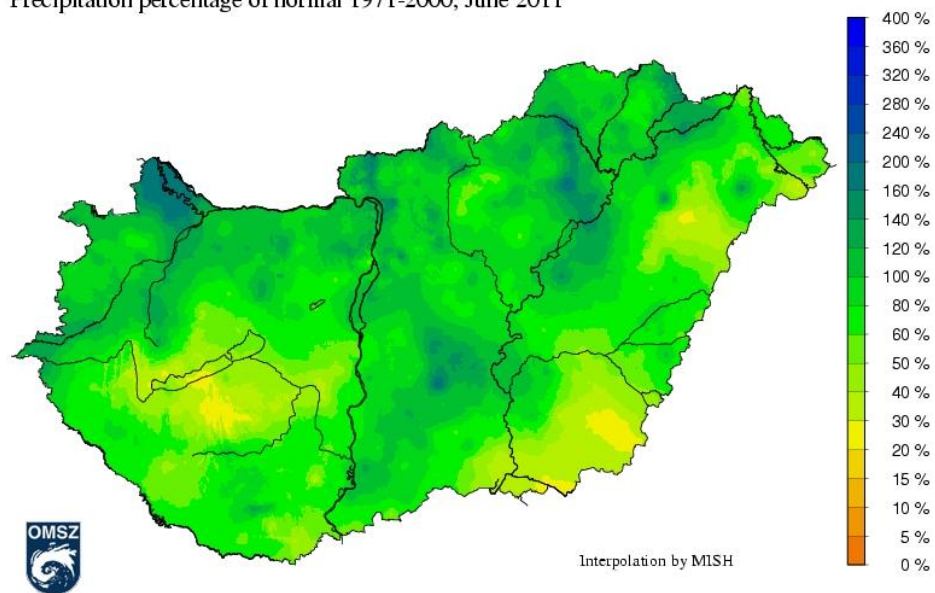


Figure 5. Precipitation percentage of normal 1971-2000, June 2011.

The first third was the wettest part of the month, the national average was characterized by rainfall above 5 mm for 5 consecutive days. In the remaining part of the month on two days, on the 23d and on the 30th occurred high, exceeding 8 mm, amount of rain.

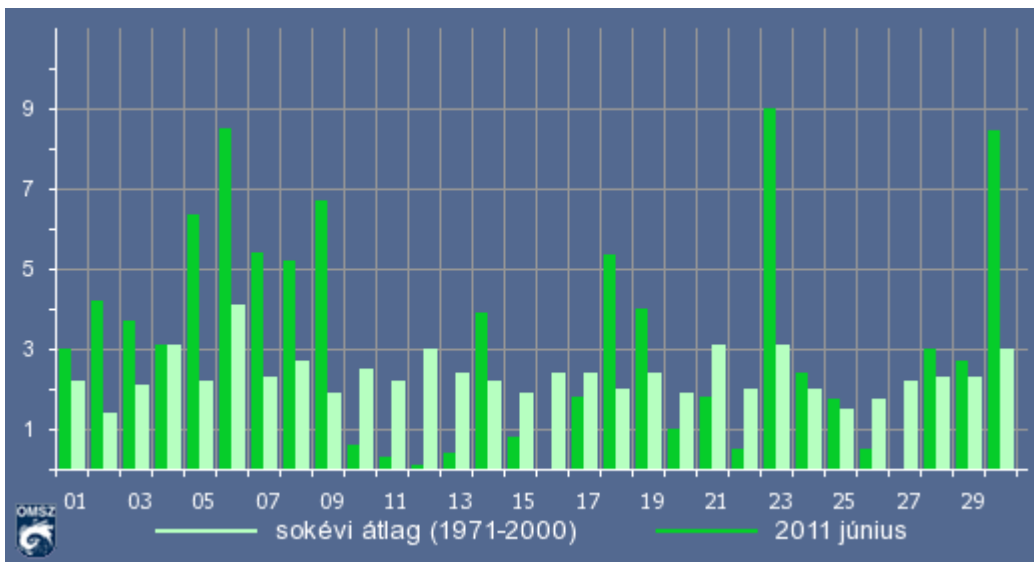


Figure 6. Daily average precipitation in June 2011.

Maximum precipitation of the month:	174.5 mm	Jakabszállás	Bács-Kiskun
The lowest precipitation of the month:	13.4 mm	Mernye	Somogy
Maximum rainfall in 24 hours:	94.0 mm	Sajószentpéter	Borsod-Abaúj-Zemplén

July 2011 Temperature

The first half of the month was warmer, while the second half was cooler than usual resulting in overall around average monthly mean temperature. Average rainfall in this month was above average.

In most parts of the country at 20 °C higher than average temperatures prevailed, except for the higher mountains and the northwest part of the country. In the Mátra and Bükk mountains the average temperature was below 17 °C with some parts of the Mátra below 14 °C as well.

Középhőmérséklet, 2011. július
Mean temperature, July 2011

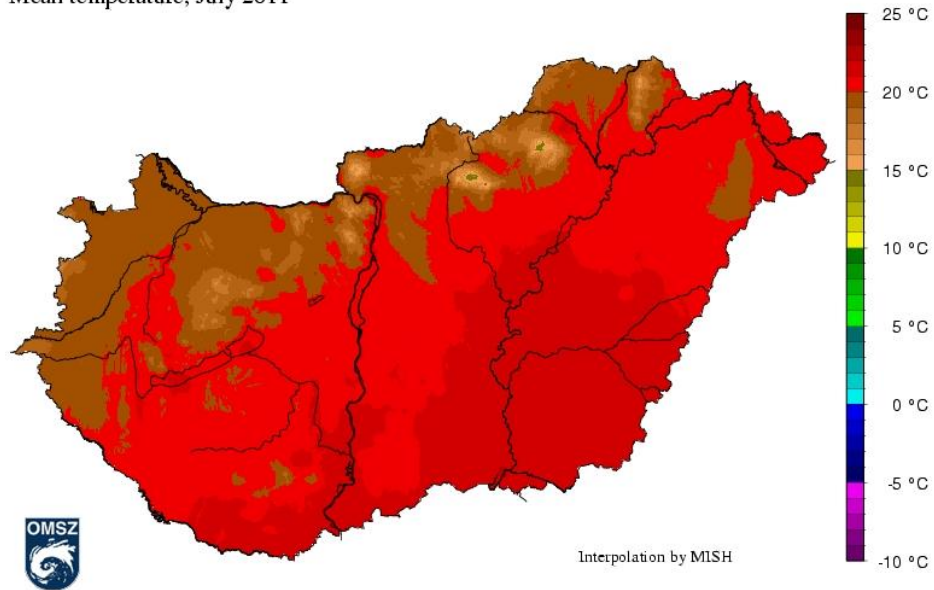


Figure 7. Mean temperature, July 2011.

Figure 8. shows that the monthly mean temperature is not much deviated from the climatic average, at most places the difference was around $-0.5 - +0.5$ °C. The northern part of the country was slightly colder there the anomalies were around -1 °C.

Középhőmérsékleti anomália az 1971-2000 átlaghoz viszonyítva, 2011. július
Temperature anomaly relative to 1971-2000, July 2011

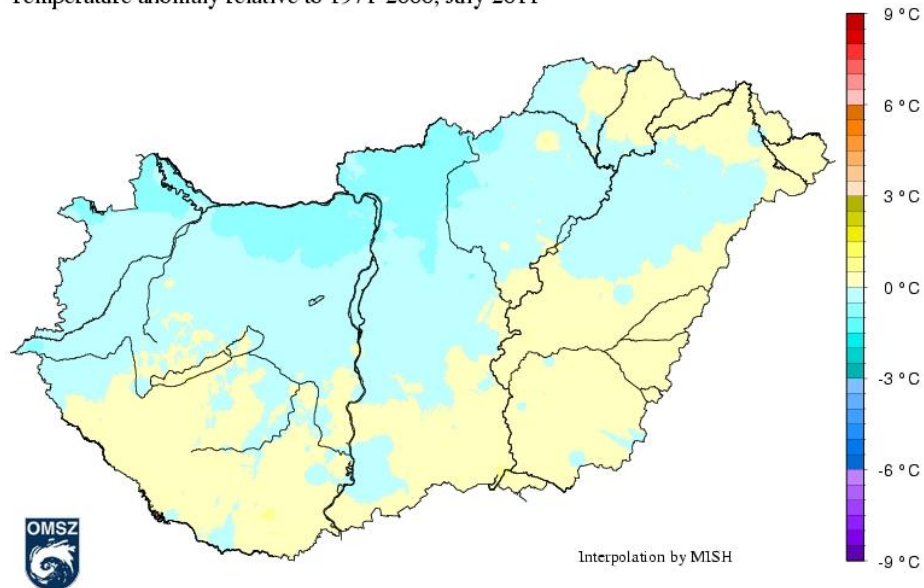


Figure 8. Temperature anomaly relative to 1971-2000, July 2011.

The beginning of the month was cooler than average, than from 2nd to the 10th July the country wide average temperature gradually increased 14 °C, reaching the highest daily average temperature of the month. At the warming phase the daily maximum temperature record was broken twice, 9th July Pécs with 37.9 °C and 10th July Túrkeve with 39.1 °C, The latter was also the highest temperature recorded during the month. Up until 19th July the temperature was warmer than the climatological average, then after a more intense cooling the temperature dropped below the average and remained below until the end of the month.

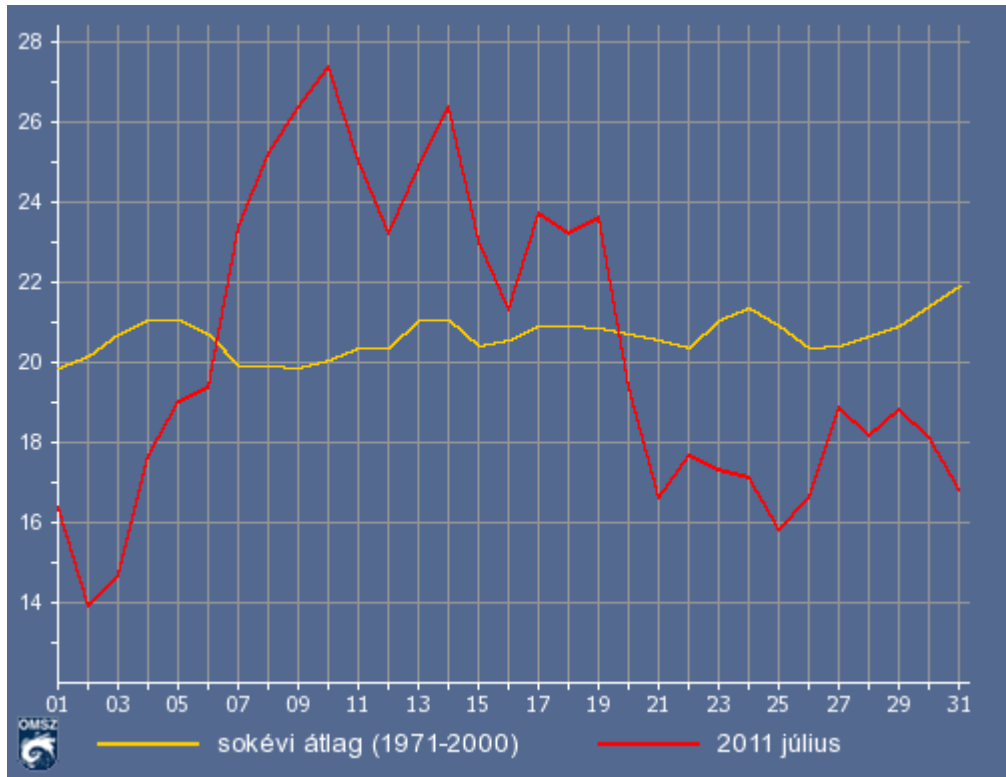


Figure 9. Daily mean temperatures in July 2011. (yellow-climate, red-July 2011)

The highest temperature recorded during the month:	39.1 °C	Túrkeve	Jász-Nagykun-Szolnok	31th July
The lowest temperature recorded during the month:	4.6 °C	Kékestető	Heves	2nd July

Precipitation

The monthly rainfall exceeded 30 mm across the country in July. At the Transdanubian Mountains, Mecsek and Tiszántúl regions above 100 mm precipitation had fallen. The highest values were observed at Tiszántúl, where in some places 180 mm was exceeded as well.

Csapadékösszeg, 2011. július
Precipitation, July 2011

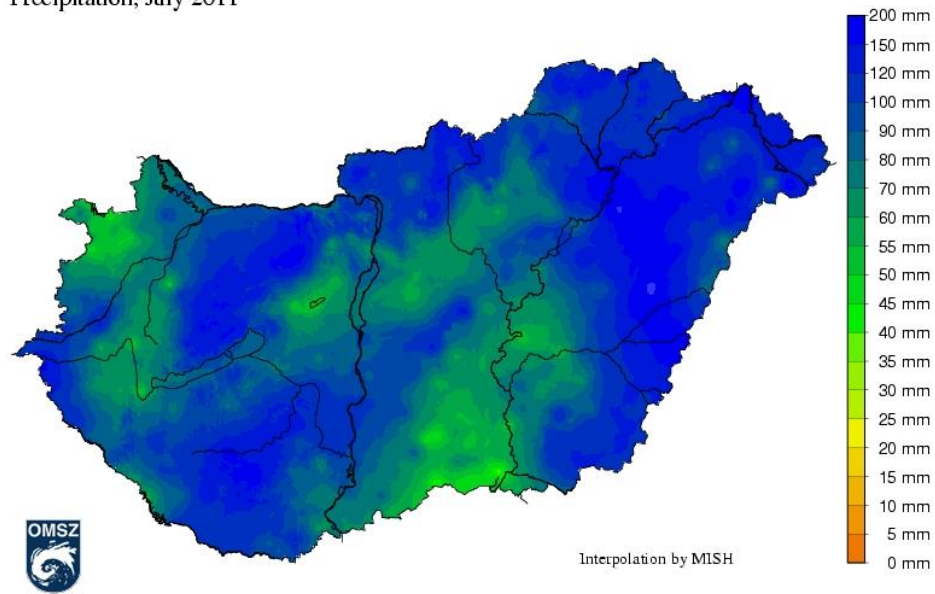


Figure 10. Precipitation, July 2011.

Most parts of our country had more than usual precipitation (*Figure 11.*), the only exceptions being the western part of Transdanubia and the southern boundary of the Great Plains. Some parts of Transdanubia had 2-3 times while some parts of Tiszántúl 4 times the values of the climatological average.

A csapadékösszeg aránya az 1971-2000 átlaghoz viszonyítva, 2011. július
Precipitation percentage of normal 1971-2000, July 2011

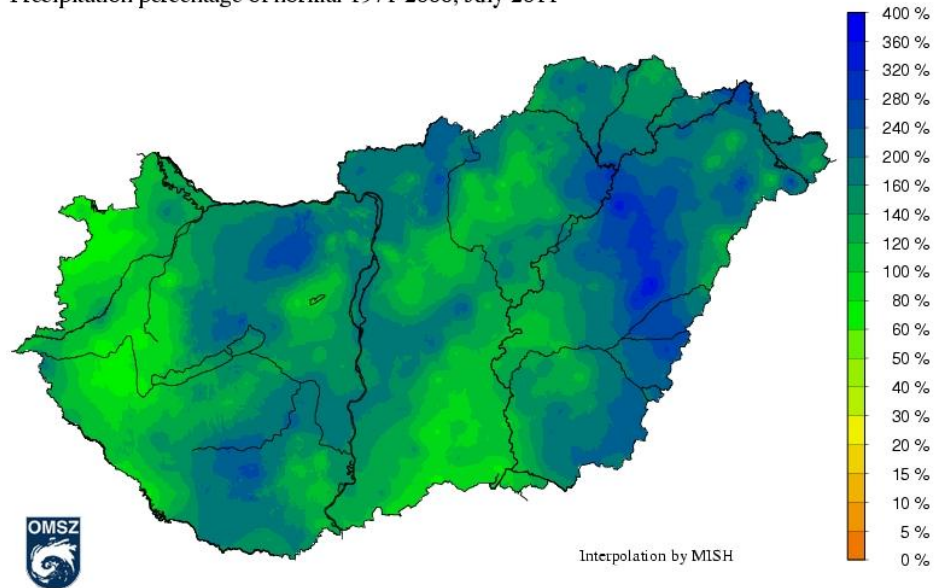


Figure 11. Precipitation percentage of normal 1971-2000, July 2011.

High rainfall amounts primarily occurred in the second half of the month. Four times on 19, 20, 28 and 29 on The national average amount of rain exceeded 10 mm four time, on the 19th, 20th, 28th and 29th July. We received reports of rainfall being close to or exceeding 40 mm on all these days.

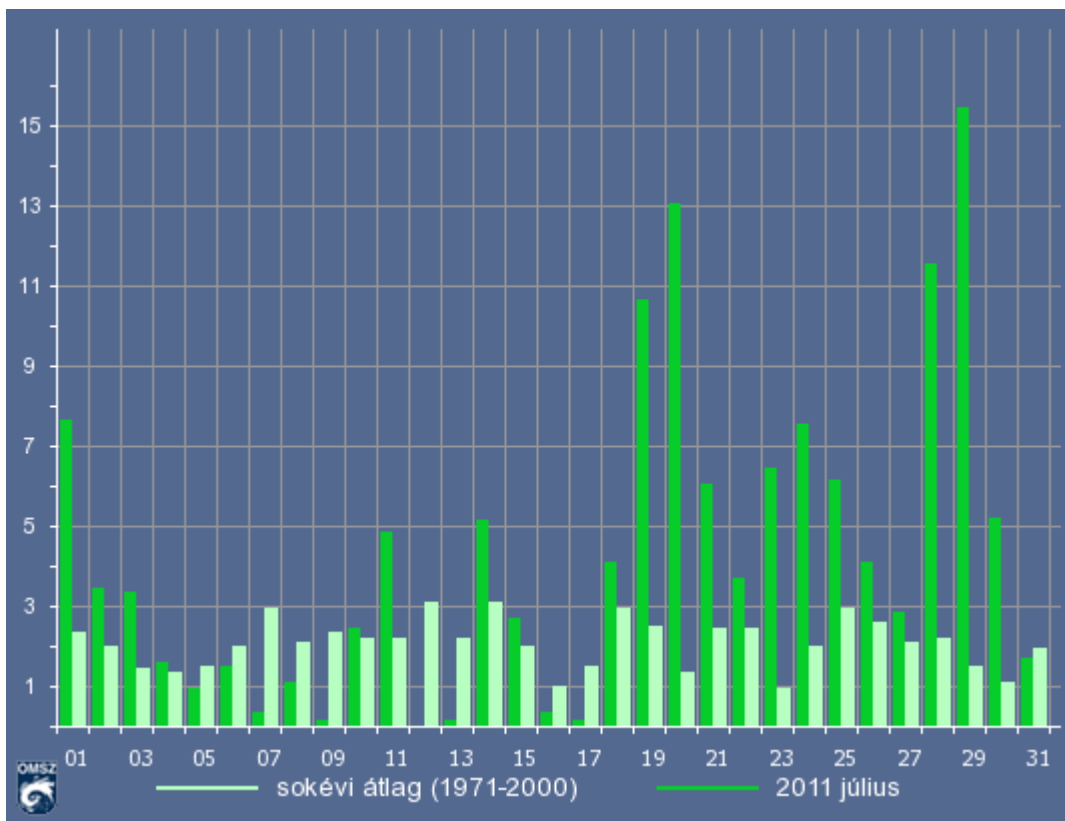


Figure 12. Daily average precipitation in July 2011.

Maximum precipitation of the month:	232,6 mm	Földes	Hajdú-Bihar
The lowest precipitation of the month:	36,2 mm	Szeged külterület	Csongrád
Maximum rainfall fell in 24 hours:	112,6 mm	Földes	Hajdú-Bihar

August 2011

Temperature

The monthly average temperature in August 2011 (Figure 13.) was mostly above 20 °C. The warmest parts were at the southeast region of the country along the Tisza river with temperatures above 24°C at some places, while the coldest parts were mostly in the Northern Mountain Range.

Középhőmérséklet, 2011. augusztus
Mean temperature, August 2011

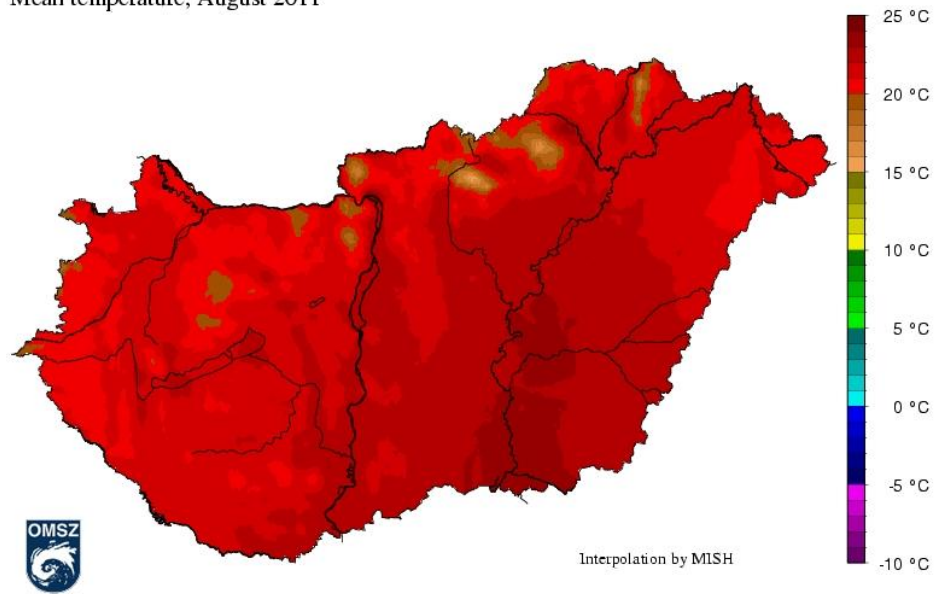


Figure 13. Mean temperature, August 2011.

August was warmer than usual across the country. (Figure 14.). The biggest anomalies, with values between 2 - 3 °C, can be seen roughly along the Tisza river, while in the northwest and southwest parts the anomaly was between 1-1,5 °C.

Középhőmérsékleti anomália az 1971-2000 átlaghoz viszonyítva, 2011. augusztus
Temperature anomaly relative to 1971-2000, August 2011

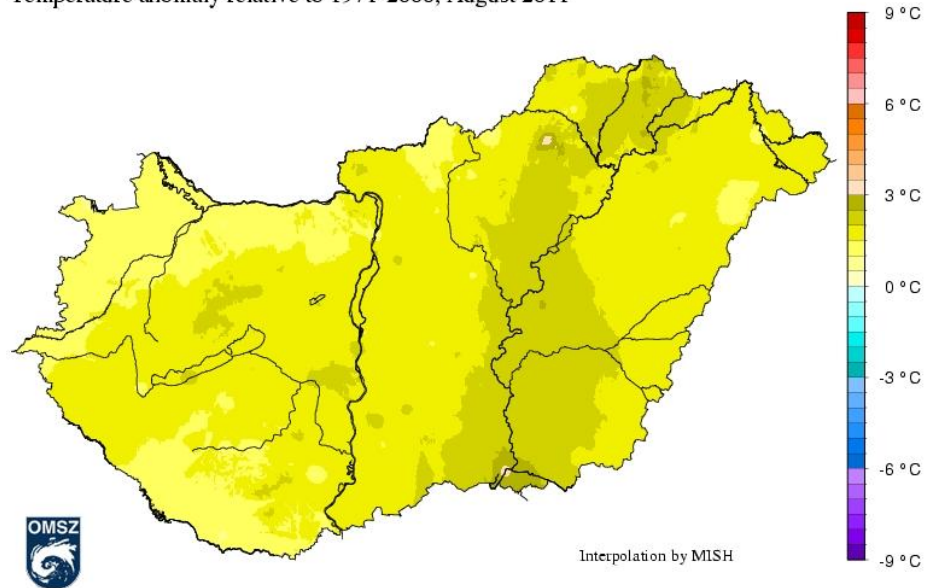


Figure 14. Temperature anomaly relative to 1971-2000, August 2011.

In the first half of the month the daily temperatures were mostly under the average, the coolest day of the month was 11th and from than on gradually rose the temperature. From the 13th until the end of the month the temperature was above the climatological average with the highest positive anomaly on the 26th.

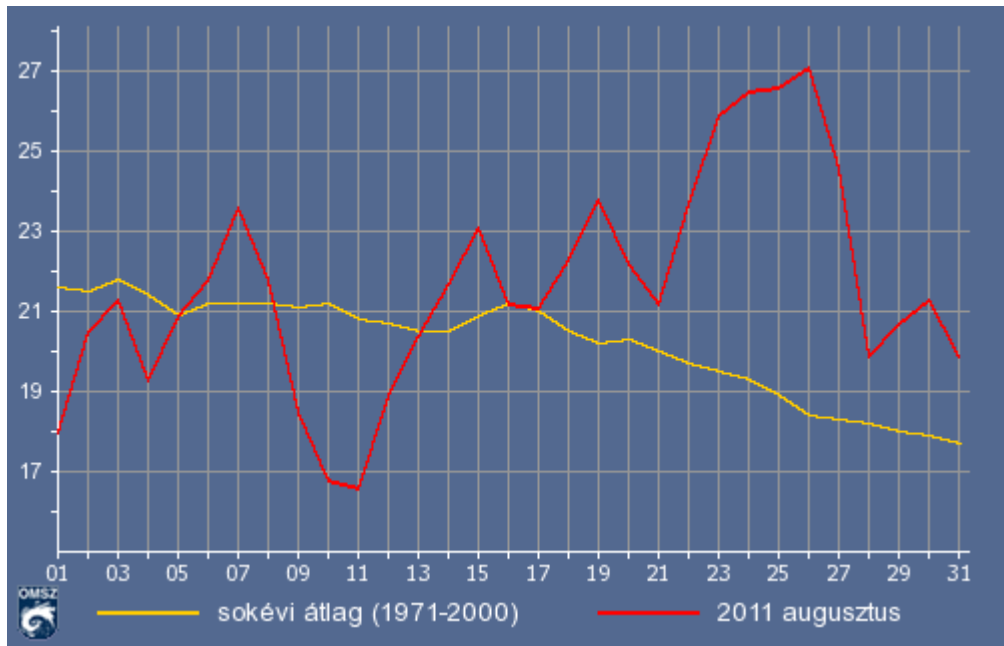


Figure 15. Daily mean temperatures in August 2011. (yellow-climate, red-August 2011)

The highest temperature recorded during the month:	39.2 °C	Baja	Bács-Kiskun	25 th August
The lowest temperature recorded during the month:	5.1 °C	Nagykanizsa	Zala	11 th August

Precipitation

In most parts of the country the monthly rainfall was under 25 mm with the lowest being Magyarcsanád in the southeast where no precipitation was measured during the month. On the other hand in the northwest some regions had above 100 mm.

Csapadékösszeg, 2011. augusztus
Precipitation, August 2011

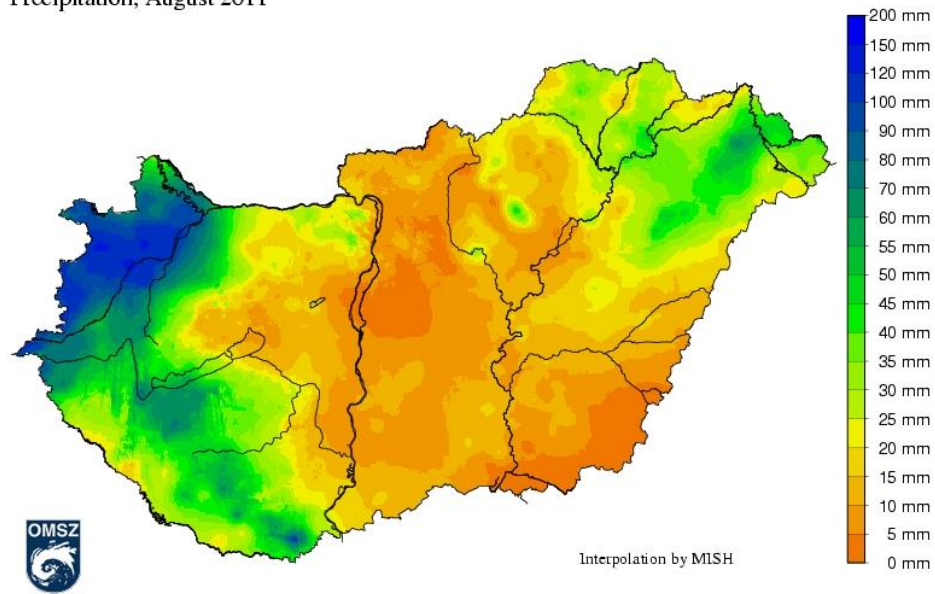


Figure 16. Precipitation, August 2011.

The monthly precipitation anomaly shown on *Figure 17*. is following the same pattern as *Figure 16*. Except the Kisalföld, and some regions of the southwest and northeast parts of the country the monthly amount of precipitation was less than the average of the 1971-2000 period. In some parts of Csongrád, Békés and Fejér counties less than 10% of the climate values were measured.

A csapadékösszeg aránya az 1971-2000 átlaghoz viszonyítva, 2011. augusztus
Precipitation percentage of normal 1971-2000, August 2011

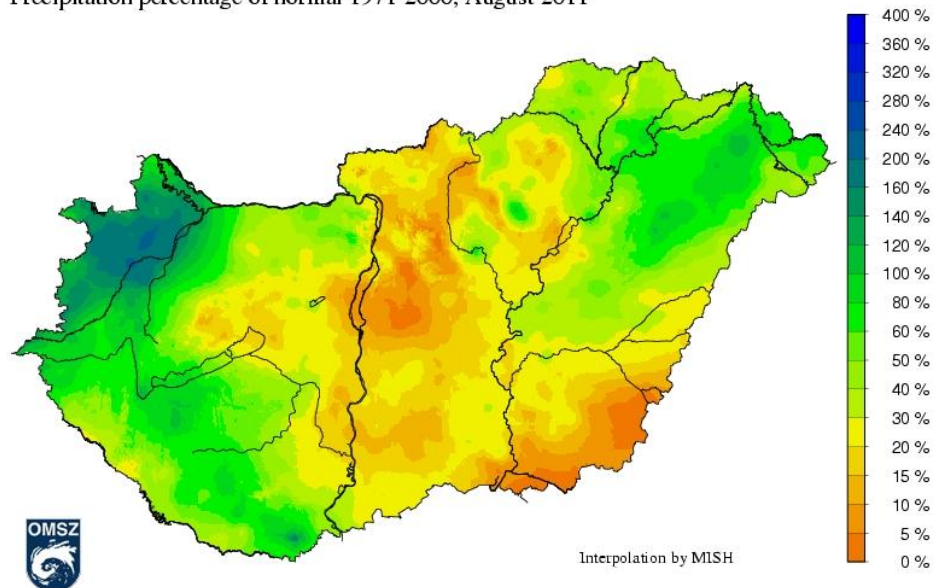


Figure 17. Precipitation percentage of normal 1971-2000, August 2011.

Notable amount of rainfall occurred mainly at the beginning of the month with country wide daily average precipitation exceeding 5 mm on the 3rd, 4th, 7th and 8th of August.

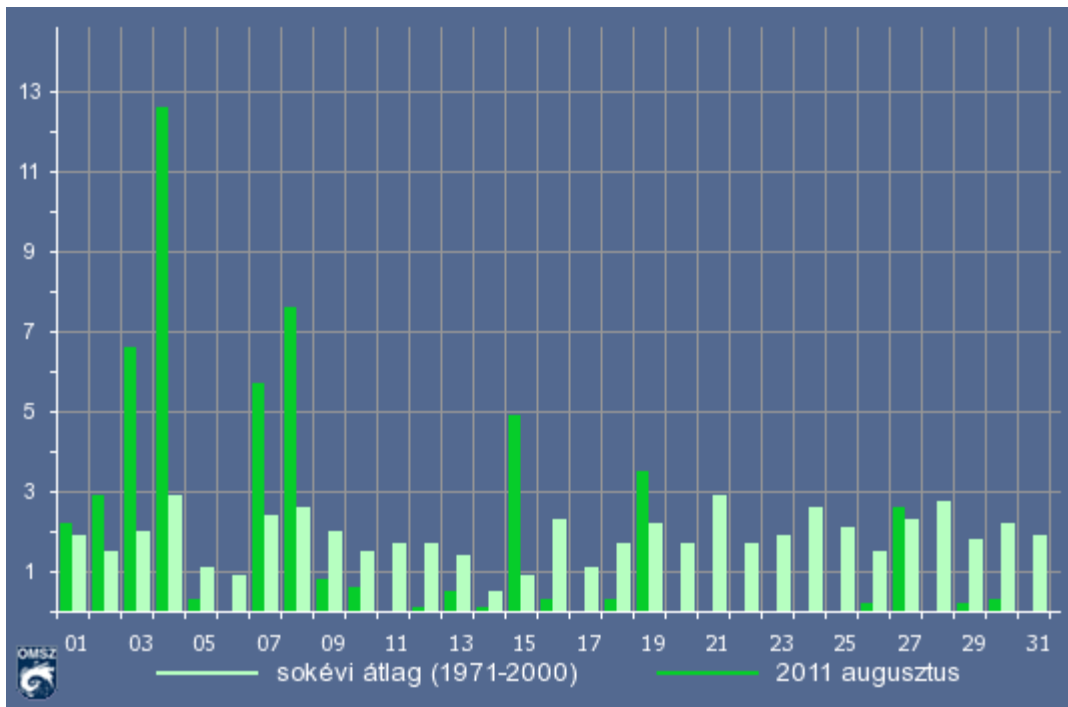


Figure 18. Daily average precipitation in August 2011.

Maximum precipitation of the month:	136.5 mm	Lövő	Győr-Moson-Sopron
The lowest precipitation months:	0 mm	Magyarcsanak	Csongrád
Maximum rainfall fell in 24 hours:	111.4 mm	Villány	Baranya

Comparison of the forecasts with the observations and the climate of 1971-2000

In the case of both the country wide monthly average temperature (*Figure 19.*) and precipitation (*Figure 20.*) the direction of the observed anomalies compared to the climate were forecasted successfully in June and August. For the temperature and for the June precipitation the predicted values were close to the observed as well while in August the observed rainfall was even lower than the predicted. As we mentioned earlier the second half of July was colder and had more precipitation than the climatic average and our forecast could not predict this, even the direction of the anomalies were wrong.

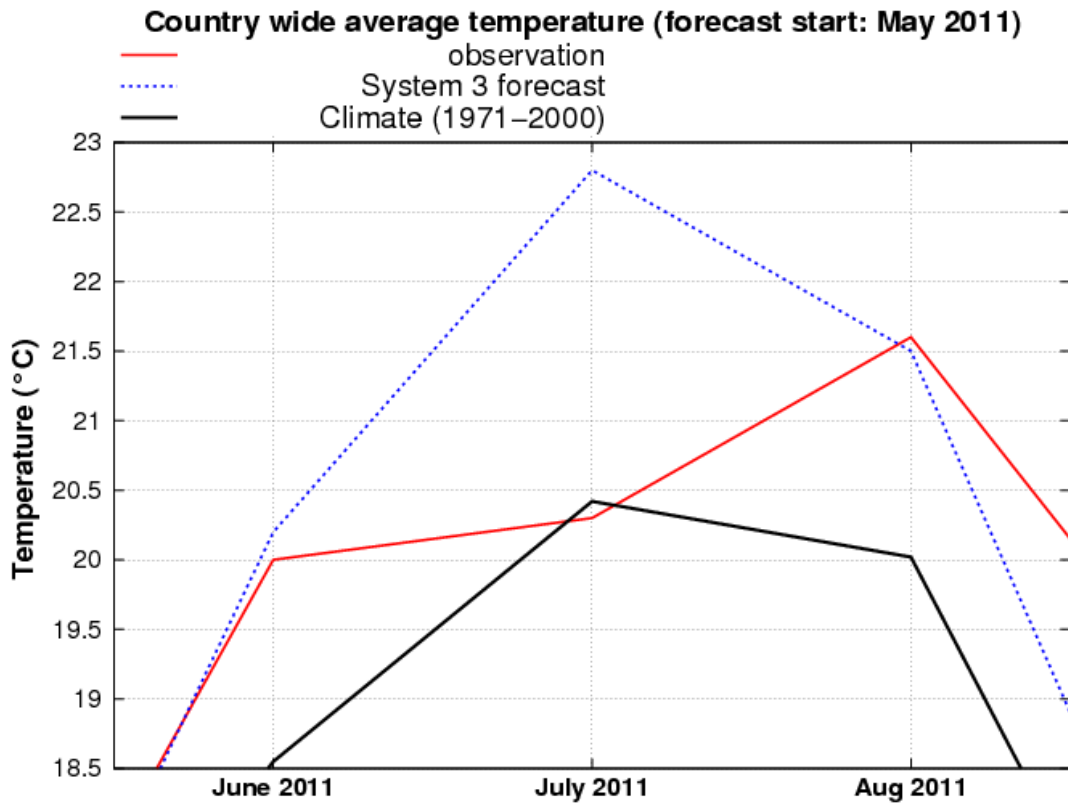


Figure 19. Country wide monthly average temperature.

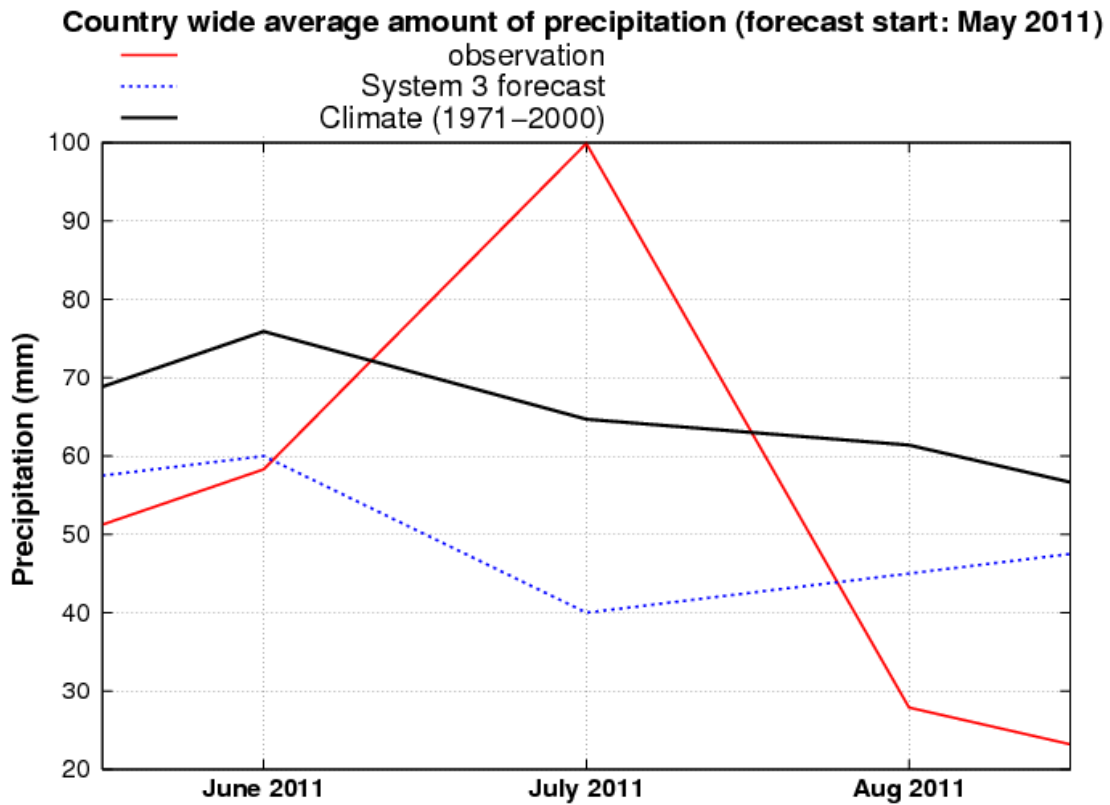


Figure 20. Country wide monthly average amount of precipitation.