

1 February 2023

Monthly weather summary – January 2023

January was warmer and drier than average. Rainfall amounts were considerably below average and in large parts of the country they amounts reached just a half of the monthly average.

In the first half of the month there were quite a few rainy days, but in the second half of the month there was a respite of about two weeks in the rains, and it ended with an episode that began at the end of the month and continued into February.

January was considerably warmer than average and ranks sixth in the nationwide series of temperature measurements since 1950. Particularly prominent was a prolonged hot period in during the second half of the month.

Rainfall amounts

Rainfall amounts in January were small in most parts of the country. In the Upper Galilee, 110 mm to 130 mm of rain fell, which is about 40% to 60% of the monthly average. The Golan Heights and the Lower Galilee, too, received only about half of the monthly average. In the Hula Valley and in the Sea of Galilee, 60 mm to 80 mm of rain fell, which is about 50% to 70% of the monthly average, and in parts of the Jezreel Valley the monthly amounts were close to average. Further south, the lack of rainfall is even more clear with 30% to 60% of the average in Samaria, and in the Jerusalem and Gush Etzion areas rainfall amounts were 30 mm to 50 mm, which is about a quarter to a third of the average for January. Rain was also scarce in the south of the country, in contrast to December in which this area was rainy.

The northwestern parts of the country were more rainy, mainly due to weak rainfall systems that arrived at the first part of the month and mainly affected these areas. In the northern and central coastal plain and up to the Netanya area, 120 mm to 150 mm of rain fell, which account for 65% to 90% of the average for January. In the Sharon region, especially in its northern part, 160 mm to 180 mm of rain fell in January, amounts that are close to or exceeding the monthly average. In the southern part of the coastal plain there was a decrease in the rainfall, and from Tel Aviv to the south the amounts reached 40% to 60% of the monthly average and even less in the southern coastal plain and the the Judean Foothills. Specifically in the Rehovot area the quantities were larger and were close to the average (Figure 1). Table 1 shows the rainfall data for January compared to the average for a number of stations.

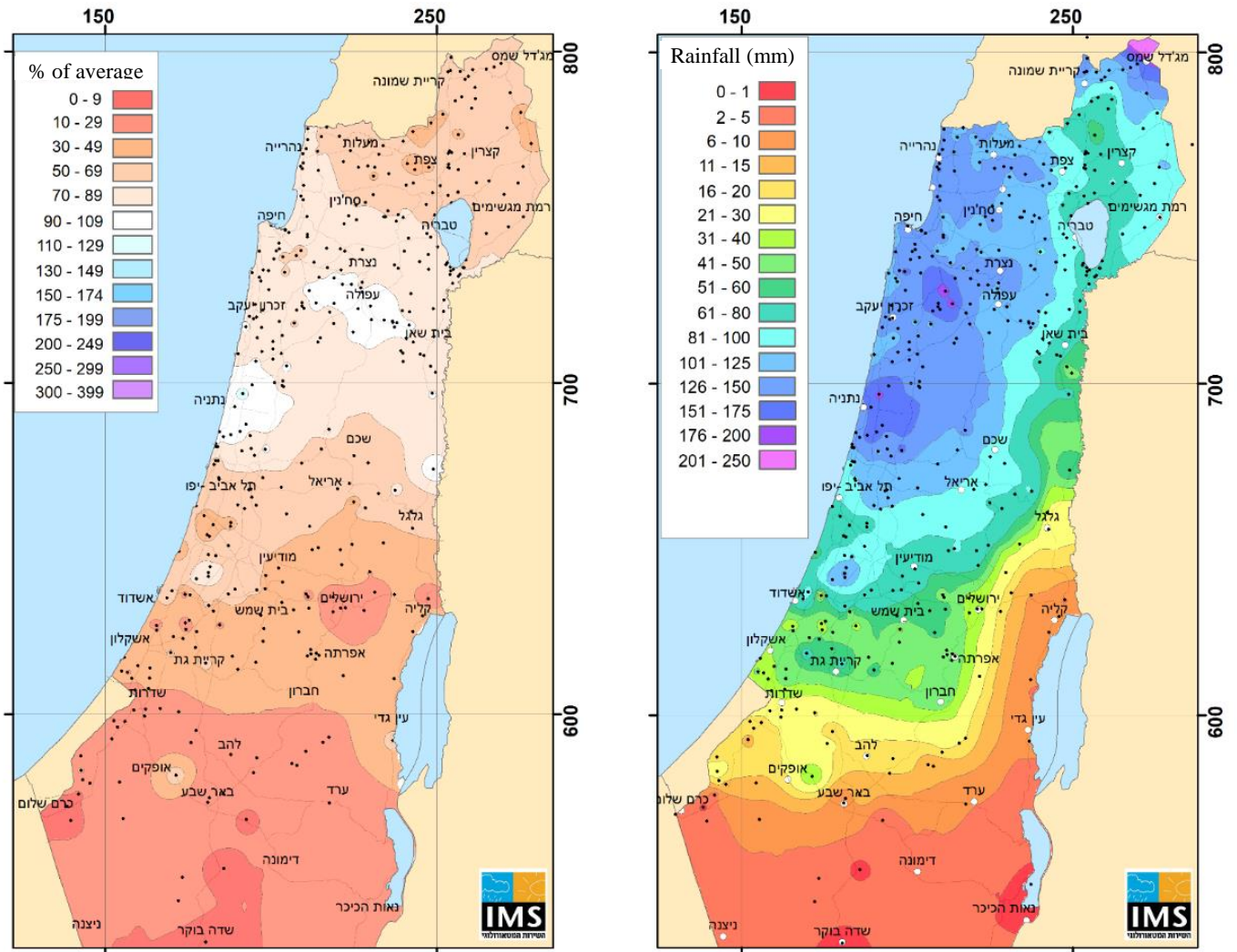


Figure 1: Rainfall amounts in January (right - mm) and comparison to the monthly multi-annual average (left - %)

Table 1: Rainfall amounts in January 2023 in comparison with the multi-year average for the month*

Area	Station	Rainfall in January 2023 (mm)	Multi-year average for January (mm)*	% of average for January
Coastal plain and Lowlands	Rosh Haniqra	137	169	81%
	Nahariyya	133	174	76%
	Evron	138	177	78%
	Haifa Technion	137	182	75%
	Haifa (Port)	144	161	89%
	Yagur	134	194	69%
	En Hashofet	128	182	70%
	Zichron Yaakov	131	168	78%
	Amikam	122	177	69%
	Gilad	118	182	65%
	En HaHoresh	167	156	107%
	Bene Dror	178	158	113%
	Kefar Hess	132	166	80%
	Nir Eliyyahu	130	169	77%
	Nahshonim	102	151	68%
	Hakfar Hayarok	98	154	64%
	Tel Aviv Coast	78	127	61%
	Mikve Yisrael	65	155	42%
	Bet Dagan	62	154	40%
	Ben Gurion Airport	63	158	40%
	Rishon Lezion	62	140	44%
	Palmahim	50	132	38%
	Nezer Sereni	102	155	66%
	Gan Shlomo	140	140	100%
	Nir Galim	92	143	64%
	Qevuzat Yavne	80	145	55%
	Nizanim	45	138	33%
	Negba	70	129	54%
Zikim	44	119	37%	
Dorot	23	111	21%	
Yakhini	21	133	16%	
Be'eri	14	98	14%	
Besor	3	64	5%	
Northern Mountains	Nimrod Fortress	137	202	68%
	Merom Golan Picman	94	215	44%
	Gamla	81	147	55%
	Elon	123	217	57%
	Kabri	121	186	65%
	Kefar Giladi	130	197	66%
	Hurfeish	124	232	53%
Meron	116	244	48%	

Area	Station	Rainfall in January 2023 (mm)	Multi-year average for January (mm)*	% of average for January
	Zefat Har Kenaan	89	185	48%
	Harashim	111	267	42%
	Deir Hana	103	166	62%
Northern Valleys	Newe Ya'ar	120	162	74%
	Afula Nir HaEmek	115	120	96%
	Merhaviya	128	122	105%
	Banias	124	176	70%
	Dafna	108	157	69%
	Kefar Blum	80	133	60%
	Ayelet HaShahar	67	133	50%
	Ginosar	74	121	61%
	Zemah	74	100	74%
	Sede Eliyyahu	48	69	70%
Central Mountains	Kedumim	109	169	64%
	Eli	76	171	44%
	Talmon	66	169	39%
	Zova	55	170	32%
	Jerusalem Center	35	137	26%
	Beit Jamal	40	136	29%
	Rosh Zurim	48	147	33%
Negev	Arad	6	38	16%
	Beer Sheva	8	55	15%
	Sede Boqer**	2		
	Mizpe Ramon**	0.2		
Jordan Valley** and the Arava	Gilgal	25	125	20%
	Sedom**	1.5		
	Hazeva**	3		
	Paran**	3		
	Timna (Ramon Airport)**	0.3		
	Eilat**	1		

* The multi-year average refers to the years 1991 to 2020. For stations that did not operate during this entire period, the averages are adjusted for these years.

** In arid regions, the comparison to the average is presented literally (without exact percentages) due to the low absolute values of rainfall amounts and averages

Number of rainy days and rain events

As can be expected in a month with below average rainfall amounts, the number of rainy days was also smaller than the average. However, it should be noted that the number of days was not as small as it was in December (in which there were only 4 to 6 days of rain in the north and center of the country, from a threshold of 1 mm). In January, there were 7 to 10 days of rain in the north compared to an average of 11 to 13 days, and in the center of the country there were 5 to 7 days of rain, compared to an average of 8 to 11 days.

Most of the rainy days were in the first half of the month (until January 15th-16th). After that there was a long period with no rain at all and the rain returned on the last two days of the month. The rainfall periods in the month:

- a. January 2-3: A few millimeters in the north and the center of Israel (in Itamar 15 mm and in Gitit 16 mm).
- b. January 5-9: Rain fell on each day of this period, but most of it fell from January 6th in the afternoon to the 7th in the afternoon. In the northern mountains and the coastal plain, 15 mm to 30 mm of rain fell and in Judea and Samaria 5 mm to 15 mm. In the south of the country, several millimeters fell, most of them between the 8th and the 9th of the month.
- c. January 12-15: One of the main rainfall events of the month. The rains were concentrated in the northwest of the country, with 80 mm to 100 mm of rain falling in between Rosh Hanikra and Nahariya. In the northern Sharon region, similar amounts fell, but in the area south of Akko to Hadera, 50 mm to 80 mm fell. In the internal and the southern parts of the country the amounts decreased significantly. In the Galilee, 30 to 50 mm fell, in the Golan 10 to 20 mm, and similar amounts of rain fell in the central coastal plain. In the Judean Mountains and in the south of the country rainfall amounts were very small.
- d. January 29-31: The second significant rain system of January. Most of the rains fell on January 30-31. In the northern mountains, the northern valleys and Samaria rainfall amounts were 50 to 80 mm (in Qarne Shomron the amount was 104 mm), in the Sharon region and in the central and southern coastal plain 40 to 70 mm (in Kibbutz Eyal 109 mm and in the Rehovot area close to 100 mm), and in the Judean Mountains the rainfall the amounts were 30 mm to 50 mm. In the northern Negev, 4 to 8 mm of rain fell, and almost no rain fell further south.

Rainfall Amounts from the beginning of the season

Due to the scarcity of rainfall in January, the deficit in the cumulative rainfall amounts that had already existed at the end of December increased even more. The deficit is particularly large in the Galilee, the Golan Heights and the Hula Valley, where the cumulative amounts reach only 40% to 60% of the average for the corresponding period. A deficit of a similar rate also exists in the Judean Mountains. The rainfall situation is slightly better in the coastal plain, Samaria and the northern Negev, with cumulative amounts of 55% to 75% of the average for the corresponding period. In the Jezreel Valley, the quantities reached 70% to 80% of the average. In the south of the country there was also a scarcity of rainfall in January, but due to the relatively large amounts in the preceding months, the cumulative amounts in the central Negev are close to the average for the corresponding period, and in the Arava they even exceed it (Figure 2).

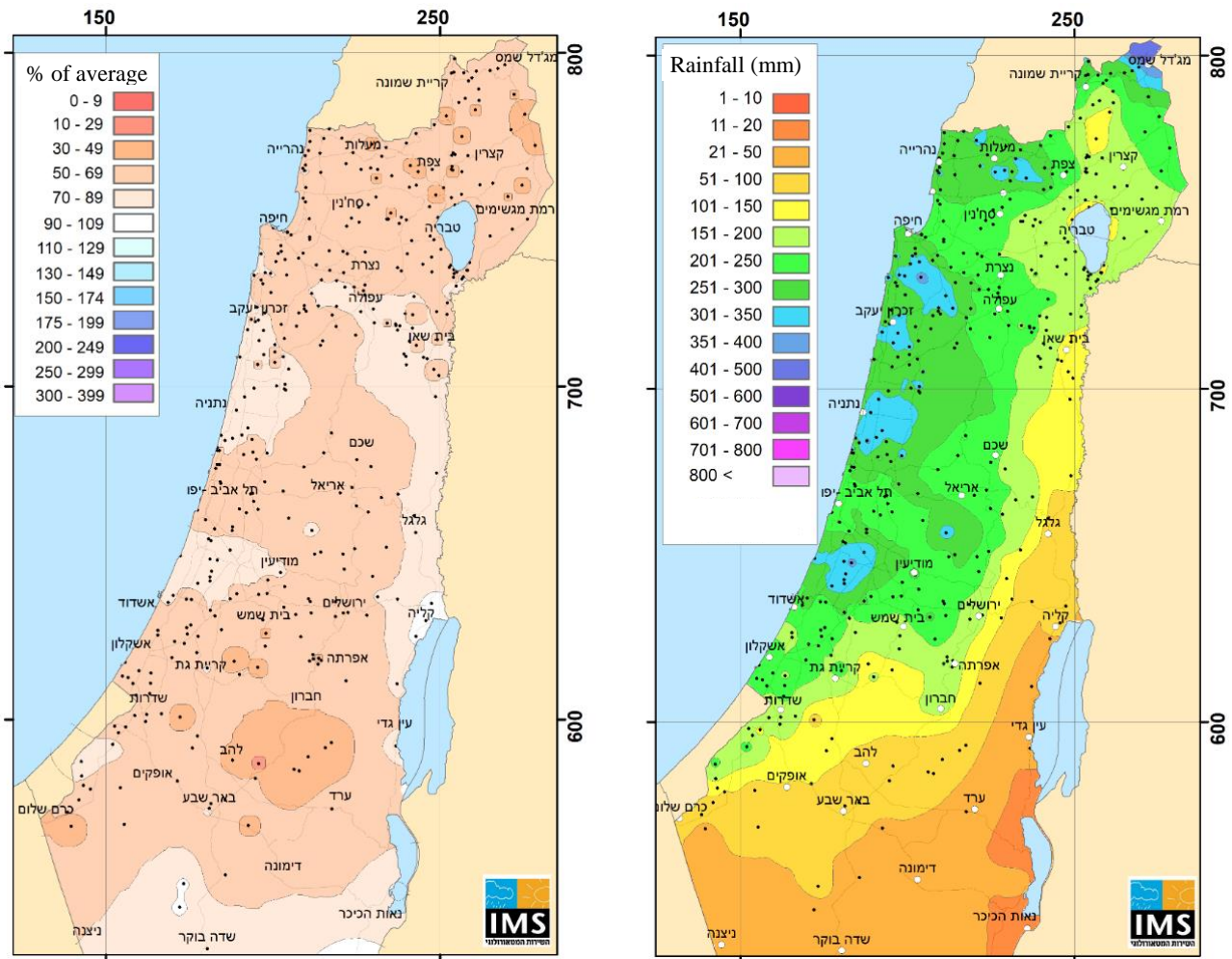


Figure 2: Rainfall amounts from the beginning of the season (right - mm) and comparison to the seasonal multi-annual average (left - %)

Table 2: The amounts of rainfall from the beginning of the season to date compared to the average*

Station	Cumulative amount from the beginning of the season to the end of January (mm)	Multi-year average* from September to late January (mm)	% of average for the period	Multi-year average* for the entire season (mm)	% of average for the entire season
Rosh Haniqra	260	412	63%	613	42%
Nahariyya	249	418	60%	615	40%
Evron	293	427	69%	626	47%
Haifa Technion	284	457	62%	671	42%
Haifa (Port)	263	390	67%	565	47%
Yagur	285	469	61%	709	40%
En Hashofet	258	446	58%	661	39%
Zichron Yaakov	303	424	71%	574	53%
Amikam	288	436	66%	635	45%
Gilad	259	438	59%	654	40%
En HaHoresh	284	397	72%	576	49%
Bene Dror	341	403	85%	578	59%
Kefar Hess	283	419	68%	614	46%
Nir Eliyyahu	261	417	63%	636	41%
Nahshonim	236	373	63%	552	43%
Hakfar Hayarok	245	388	63%	595	41%
Tel Aviv Coast	229	317	72%	443	52%
Mikve Yisrael	194	371	52%	522	37%
Bet Dagan	227	377	60%	540	42%
Ben Gurion Airport	251	388	65%	541	46%
Rishon Lezion	311	353	88%	511	61%
Palmahim	307	339	91%	474	65%
Nezer Sereni	372	396	94%	581	64%
Gan Shlomo	357	370	96%	535	67%
Nir Galim	285	356	80%	504	57%
Qevuzat Yavne	269	367	73%	526	51%
Nizanim	222	353	63%	505	44%
Negba	244	339	72%	500	49%
Zikim	231	320	72%	447	52%
Dorot	158	263	60%	394	40%
Yakhini	184	304	61%	451	41%
Be'eri	215	250	86%	359	60%
Besor	87	140	62%	216	40%
Nimrod Fortress	298	488	61%	816	37%
Merom Golan Picman	212	477	44%	811	26%
Gamla	169	349	48%	578	29%
Elon	312	516	60%	805	39%

Kabri	243	443	55%	666	36%
Kefar Giladi	278	458	61%	757	37%
Hurfeish	298	545	55%	885	34%
Meron	254	545	47%	881	29%
Zefat Har Kenaan	229	436	53%	688	33%
Harashim	296	626	47%	988	30%
Deir Hana	185	388	48%	616	30%
Newe Ya'ar	240	390	62%	584	41%
Afula Nir HaEmek	204	290	70%	460	44%
Merhaviya	226	298	76%	460	49%
Banias	264	420	63%	690	38%
Dafna	215	381	56%	615	35%
Kefar Blum	178	316	56%	507	35%
Ayyelet Hashahar	150	301	50%	472	32%
Ginosar	145	284	51%	447	32%
Zemah	166	235	71%	383	43%
Sede Eliyyahu	109	172	63%	278	39%
Kedumim	232	405	57%	642	36%
Eli	223	389	57%	522	43%
Talmon	234	405	58%	648	36%
Zova	209	399	52%	656	32%
Jerusalem Center	174	308	56%	522	33%
Beit Jamal	148	314	47%	506	29%
Rosh Zzurim	179	340	53%	564	32%
Arad	47	77	61%	134	35%
Beer Sheva	92	117	79%	192	48%
Sede Boqer	45	50	90%	87	52%
Mtzpe Ramon	29	39	75%	70	42%
Gilgal	81	108	75%	171	47%
Sedom**	22	21	Over 100%	39	58%
Hazeva**	26	21	Over 100%	40	65%
Paran**	17	15	Over 100%	33	52%
Timna (Ramon Airport)**	22	13	Over 150%	25	89%
Eilat	26	12	Over 150%	22	118%

* The multi-year average refers to the years 1991 to 2020. For stations that did not operate during this entire period, the averages are adjusted for these years

** In arid regions, the comparison to the average for the corresponding period is presented literally (without exact percentages) due to the low absolute values of rainfall amounts and averages

Temperatures and weather during January 2023

January was considerably warmer than average. This was noticeable during daytime with temperatures 2-3°C above average (1991-2020) in most parts of the country. In the Arava, the temperatures were 1.5 to 2°C higher than the average. At night, temperatures were 1.5 to 2°C higher than the average in the north and central mountains, and 1 to 1.5°C in the coastal plain and in the south of the country (Table 3).

The first week of January was cooler than the average in the mountains and inland and slightly warmer than average in the coastal plain. Later on, temperatures inland also became slightly warmer than the average (Figures 3,4).

From January 14th, it became warmer, and for more than two weeks temperatures were considerably higher than the average. At daytime temperatures were 4 to 5°C higher than the average, and at periods even by 6 to 7 °C. The warm episode peaked on the 27th to 28th of the month with temperatures of 25 to 27°C in the coastal plain, the Judean Foothills, the Negev and Arava regions, and 18 to 20°C in the mountains. At night, temperatures in the mountains were higher than the average for this period (January 15th to 29th) by 2 to 4 degrees Celsius, while in the coastal plain and valleys they were close to average. It is interesting to note that on January 27th, both the highest daily maximum temperature and the lowest minimum temperature of the month were recorded in the coastal plain and in the Judean Foothills.

On the 29th, a cooling trend began and intensified over the following two days, so that by the 31st it was colder than usual, especially in the mountains.

Comparison of January to the past

In the nationwide series of temperature measurements since 1950, January is ranked sixth. As shown in Figure 5, January 2023 is preceded by January 2010, which was the warmest, followed by January 1971, 1963, 1985, and 2021 (which was similar to or slightly warmer than the current one).

Table 1: Temperatures in January 2023 (degrees Celsius) compared to the average

	Station	January 2023		Difference from average 1991-2020	
		Maximum	Minimum	Maximum	Minimum
Coastal plain and the Judean Foothills	Haifa (Technion)	18.3	11.3	2.7	1.6
	En HaHoresh	20.1	8.0	2.6	1.1
	Bet Dagan	20.9	9.2	3.1	1.2
	Negba	19.6	9.4	2.4	1.3
Northern Mountains	Elon	18.3	10.4	1.9	1.8
	Merom Golan Picman	12.1	3.6	1.9	1.9
	Avne Eitan	17.5	7.8	2.9	1.7
	Zefat Har Kena'an	12.7	6.7	2.7	1.8
	Deir Hanna	17.5	10.7	3.0	2.1
	Tavor	20.3	9.1	3.7	2.0
Northern Valleys	Afula, Nir HaEmek	19.9	7.6	3.0	1.7
	Kefar Blum	20.2	8.0	2.8	1.8
	Zemah	21.0	10.3	2.6	1.9
	Eden Farm	20.5	9.8	2.7	2.4
Central Mountains	Qarne Shomron	18.4	10.2	2.9	2.0
	Jerusalem	14.8	8.4	2.1	1.7
	Beit Jamal	18.6	10.9	1.5	1.8
	Rosh Zurim	13.0	6.9	2.4	1.9
Negev	Besor	20.1	9.4	2.3	1.3
	Arad	16.8	8.8	2.3	1.8
	Lahav	18.1	9.5	2.6	1.8
	Sede Boqer	17.8	5.6	2.5	1.0
The Arava	Sedom	22.6	15.5	1.6	2.1
	Hazeva	21.5	10.3	1.9	1.2
	Yotvata	21.5	9.1	1.8	1.4
	Eilat	23.6	12.3	2.0	1.7

**Table 2: The extremes temperatures in January 2022 (degrees Celsius)
Compared to the past**

	January 2023				Extreme values from the beginning of measurements				Years of activity of the station
	Extreme maximum		Extreme minimum		Extreme maximum		Extreme minimum		
	Temp	Date	Temp	Date	Temp	Date	Temp	Date	
Bet Dagan	26.8	27.1.23	5.2	27.1.23	32.2	7/1/1971	-2.0	21/1/1964	1962-2023
Negba	25.3	27.1.23	6.0	27.1.23	33.0	15/1/1960	-2.5	21/1/1964	1950-2023
Zefat Har Kenaan	17.7	28.1.23	3.8	31.1.23	21.7	1/1/2000	-6.4	5/1/1942	1939-2023
Jerusalem*	20.4	28.1.23	4.4	31.1.23	26.3	15/1/1960	-3.4	27/1/1950	1867-2023
Sede Boker	26.0	28.1.23	2.3	11.1.23	27.5	15/1/1960	-4.5	15/1/2008	1922-2023
Eilat	27.8	19.1.23	9.2	10.1.23	32.2	4/1/1971	1.2	24/1/1957	1949-2023

* Jerusalem: Center 1950-2023, Talbieh 1948-1949, Palace Hotel 1935-1947, American Colony 1927-1935, Mount of Olives 1918-1926, German Colony 1895-1915, English Hospital on HaNeviim Street 1898-1913, English Hospital in the Old City 1867-1915.

Figure 3: Daily minimum and maximum temperatures in Jerusalem in January 2023 compared to the multi-year average

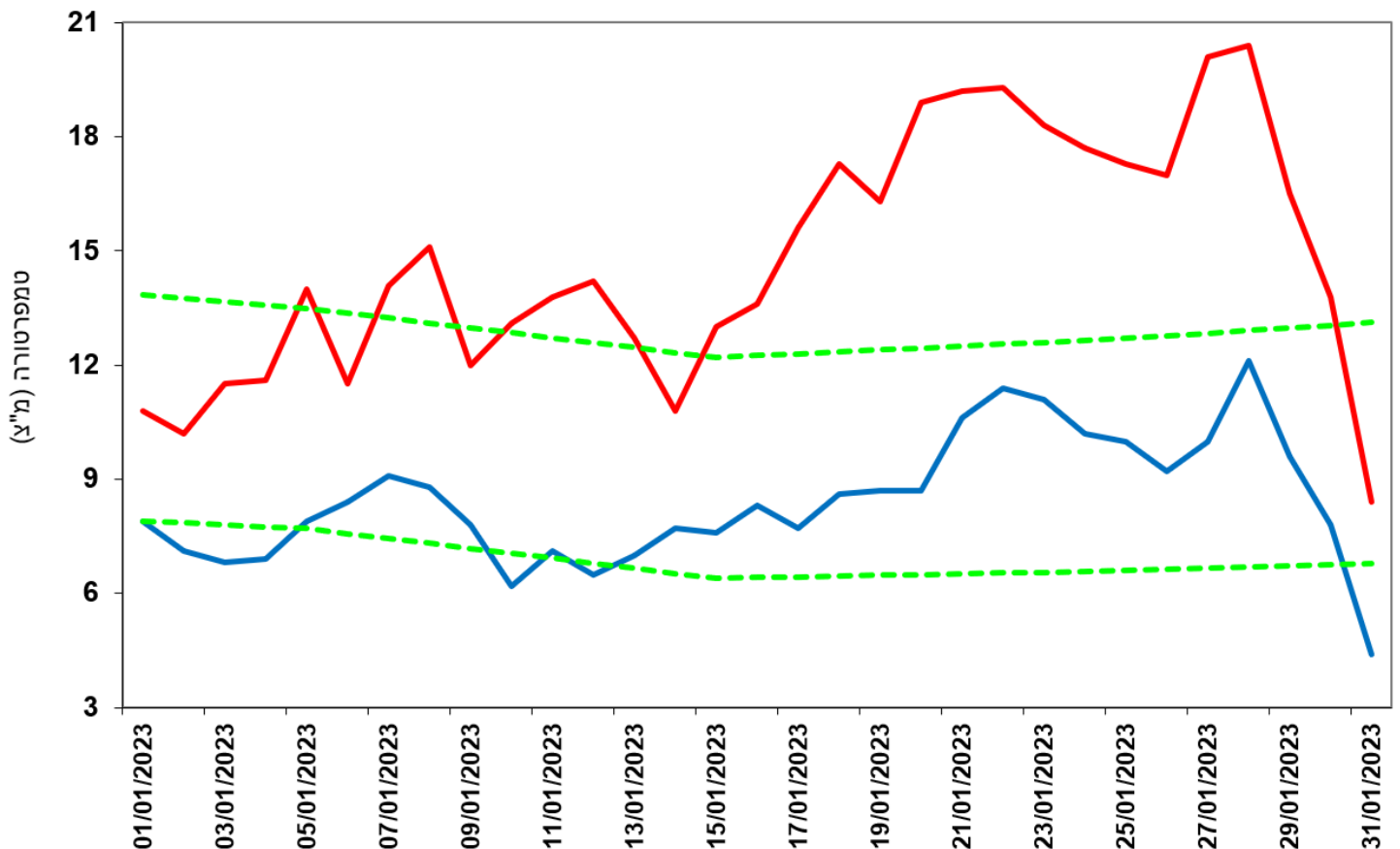


Figure 4: Daily minimum and maximum temperatures in Bet Dagan in January 2023 compared to the multi-year average

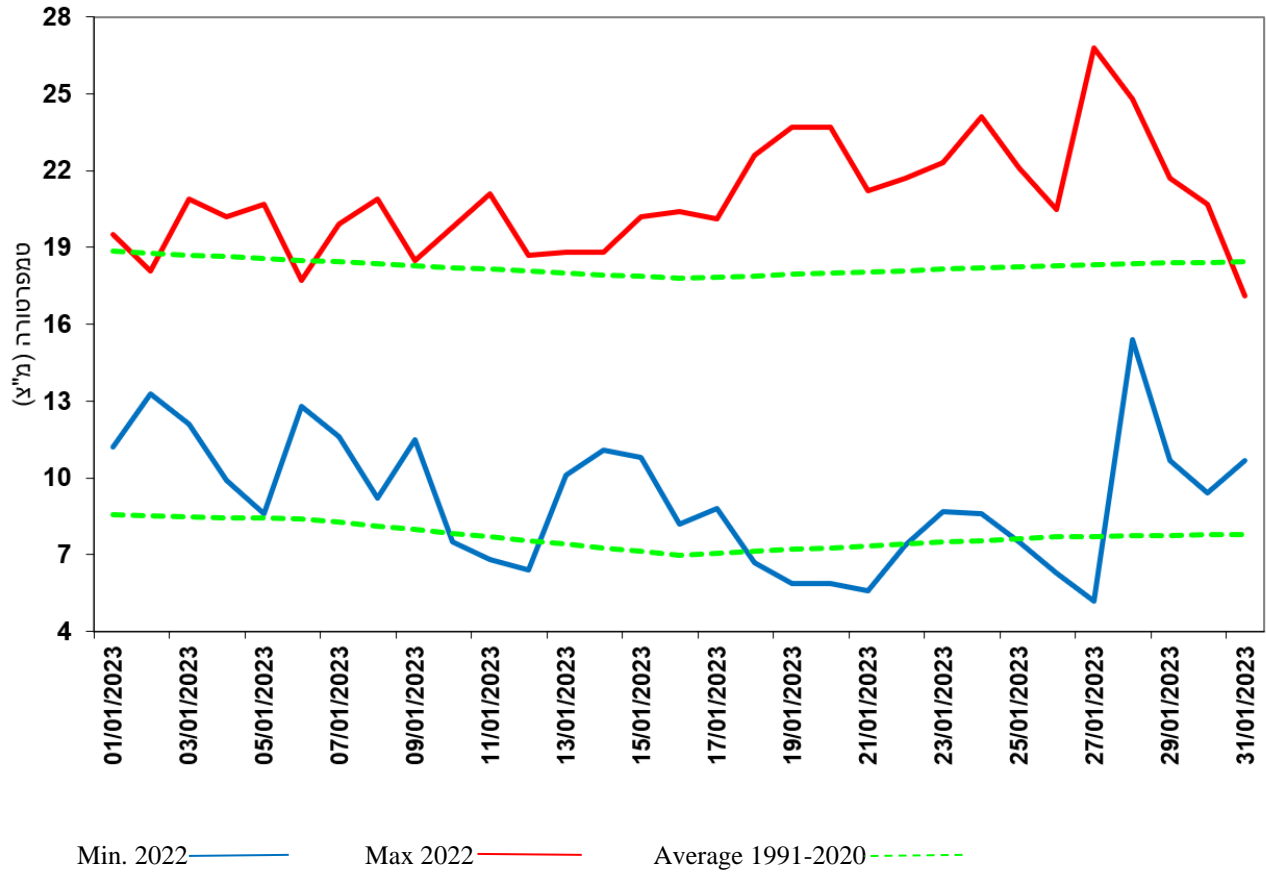
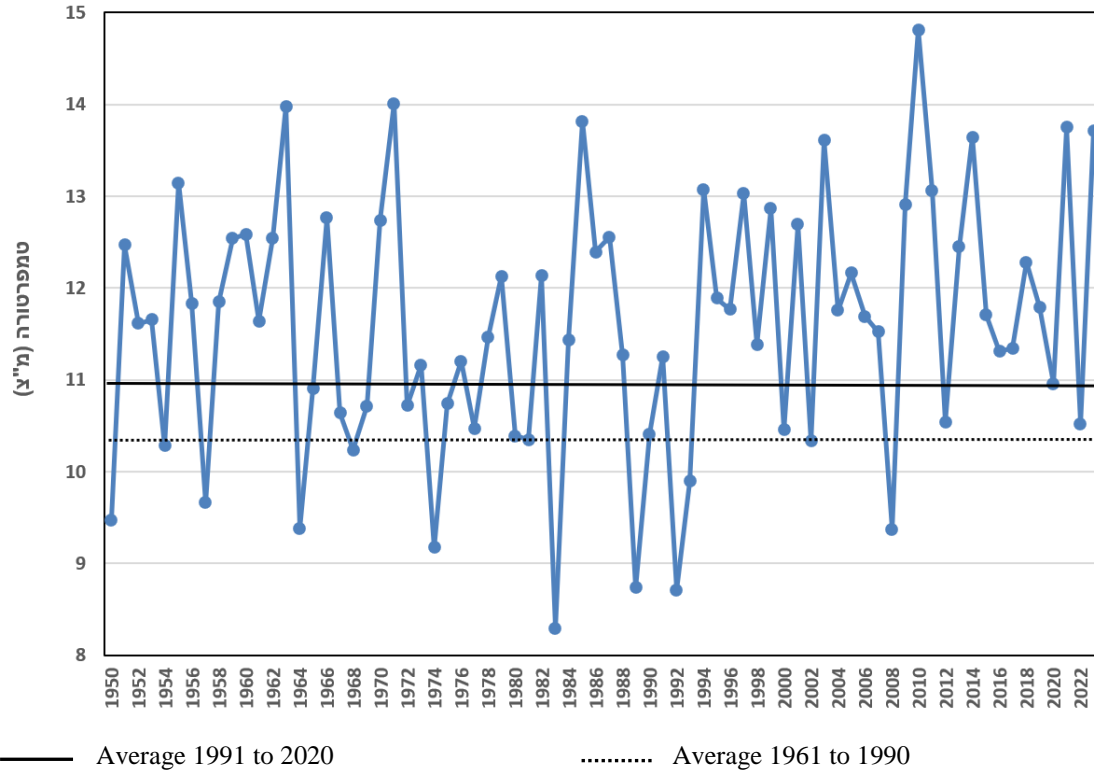


Figure 5: The average temperature in Israel in January 1950-2023



* In order to represent the territory of Israel, five characteristic stations were selected, which have data from the year 1950. The trend of averages at these stations is similar to the trend of averages at a larger and more diverse sample of stations.