

# CLIMATOLOGICAL ANALYSIS

SEASON

SUMMER 2023



BOSNIA AND HERZEGOVINA  
FEDERATION OF BOSNIA AND HERZEGOVINA  
FEDERAL HYDROMETEOROLOGICAL INSTITUTE

# CLIMATOLOGICAL ANALYSIS SEASONE SUMMER 2023.

Sarajevo, October 2023.

Mean air temperatures during the climatological summer 2023 (1<sup>st</sup> June – 31<sup>st</sup> August 2023.) ranged between 20,1 °C in Livno and 26,1°C in Mostar. On the mountain areas air temperatures were in the range of 11,1 °C on Bjelasnica to 17,5 °C on Ivan-sedlo. Temperature deviations from the normal values during the summer, which covers the period (1991.-2020.) were above normal. Deviation of the mean temperature than the average summer temperature ranged from 0,4°C in Neum to 1,4 °C in Bugojno. By percentage temperature values are classified into the category of normal and warm.

STATION	DEVIATION (1991-2020.)					PERCENTILES
	mnv	JUNE	JULY	AUGUST	SUMMER	
Bihać	246	0,1	2,0	0,7	0,9	82
Bjelašnica	2067	-0,1	2,6	-0,2	0,8	78
Bugojno	562	0,6	2,6	1,0	1,4	88
Drvar	485	0,0	2,2	0,9	1,0	80
Gradačac	225	0,2	1,6	1,3	1,0	76
Ivan-sedlo	970	-0,5	2,3	0,3	0,7	77
Livno	724	-0,4	1,5	0,7	0,6	78
Mostar	99	-0,3	2,2	0,2	0,7	77
Neum	9	-0,2	1,1	0,2	0,4	66
Sarajevo	630	-0,2	2,7	0,4	1,0	79
Sanski Most	154	0,5	1,4	0,8	0,9	84
Stolac	72	-0,5	1,0	1,4	0,6	75
Tuzla	305	0,2	1,8	1,0	1,0	78
Zenica	345	0,2	2,4	1,0	1,2	83

Table 1 Deviation middle of winter air temperatures in relation to cli standard normal and the corresponding percentiles

STATION	MOUNTH			STATION	MOUNTH		
	June	July	August		June	July	August
Bihac	Green	Red	Green	Mostar	Green	Red	Green
Bjelasnica	Green	Red	Green	Neum	Green	Yellow	Green
Bugojno	Green	Red	Green	Sarajevo	Green	Dark Red	Green
Drvar	Green	Red	Green	Sanski Most	Green	Yellow	Green
Gradacac	Green	Yellow	Green	Tuzla	Green	Red	Green
Ivan-sedlo	Green	Red	Green	Zenica	Green	Red	Green
Livno	Green	Red	Green				



Table 2 Overview of marks mean temperature during the winter months by the method of percentile

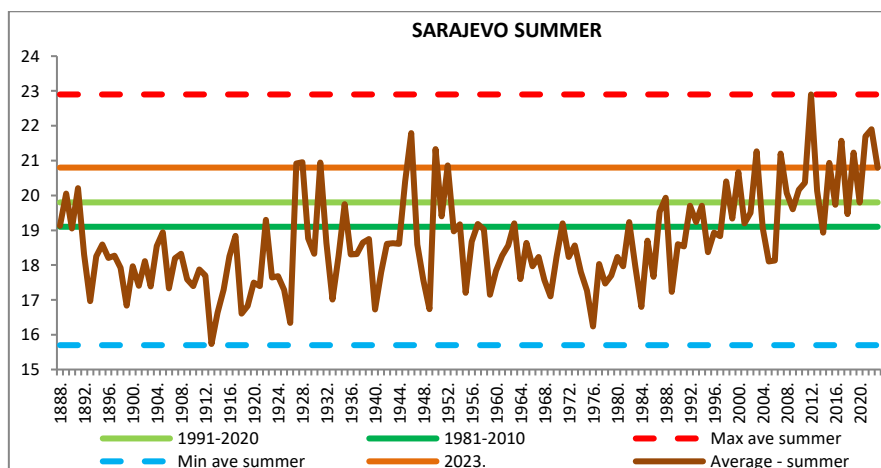
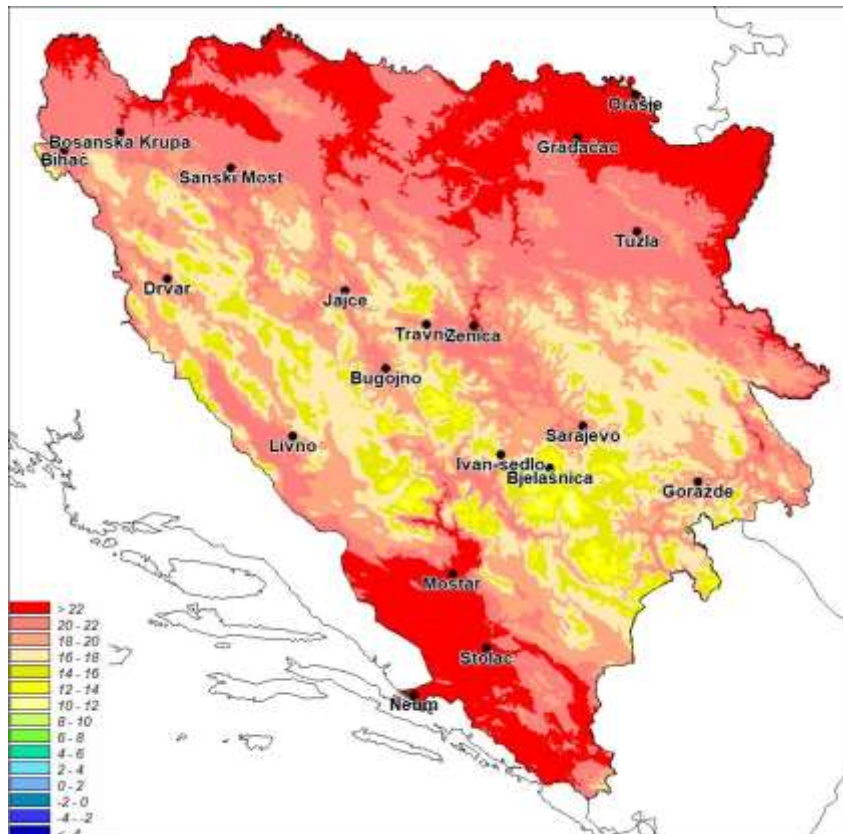
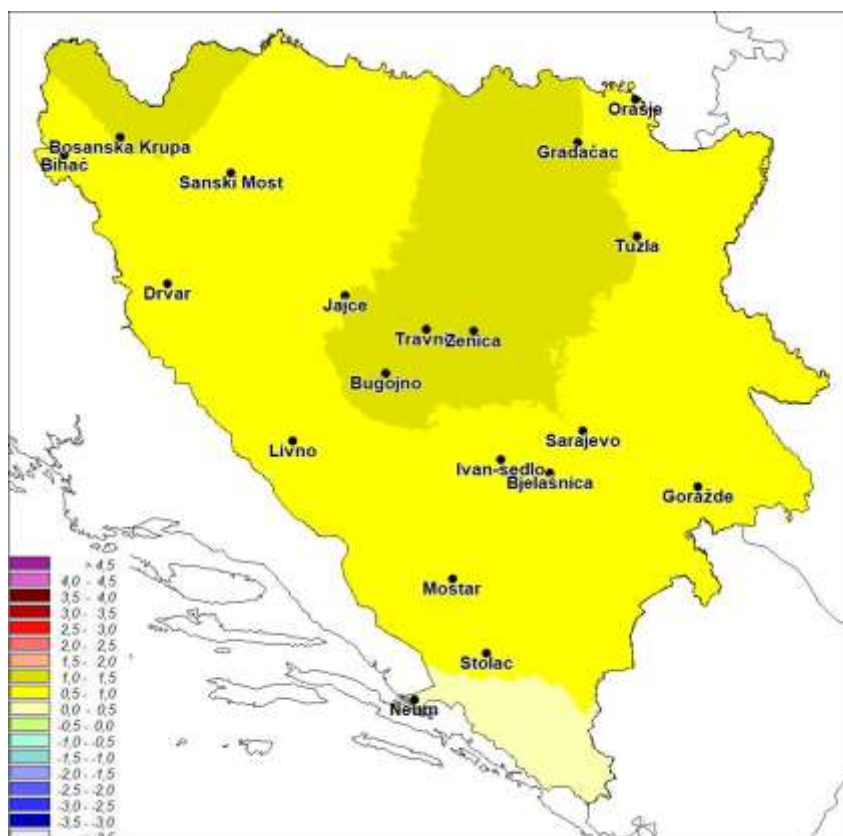


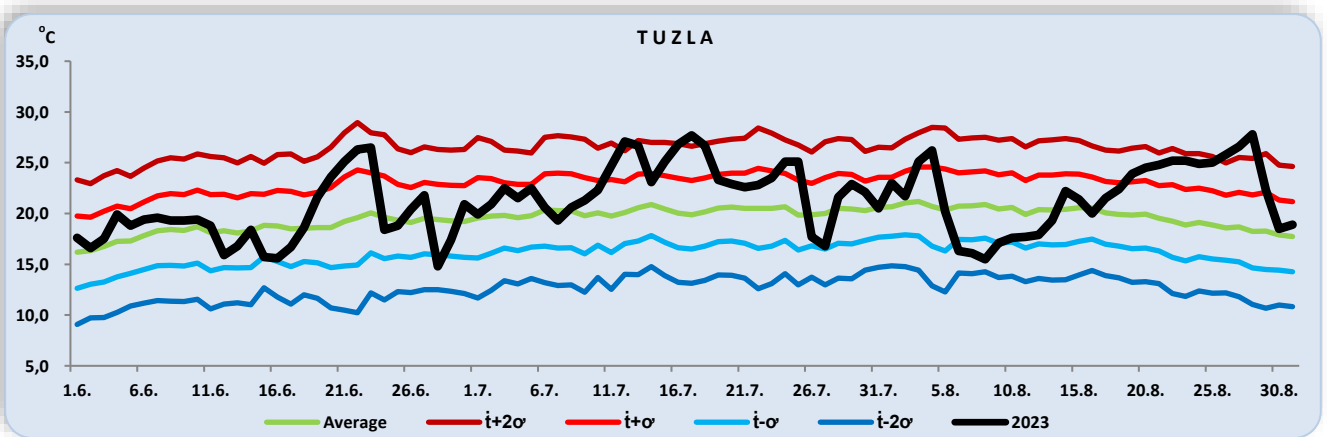
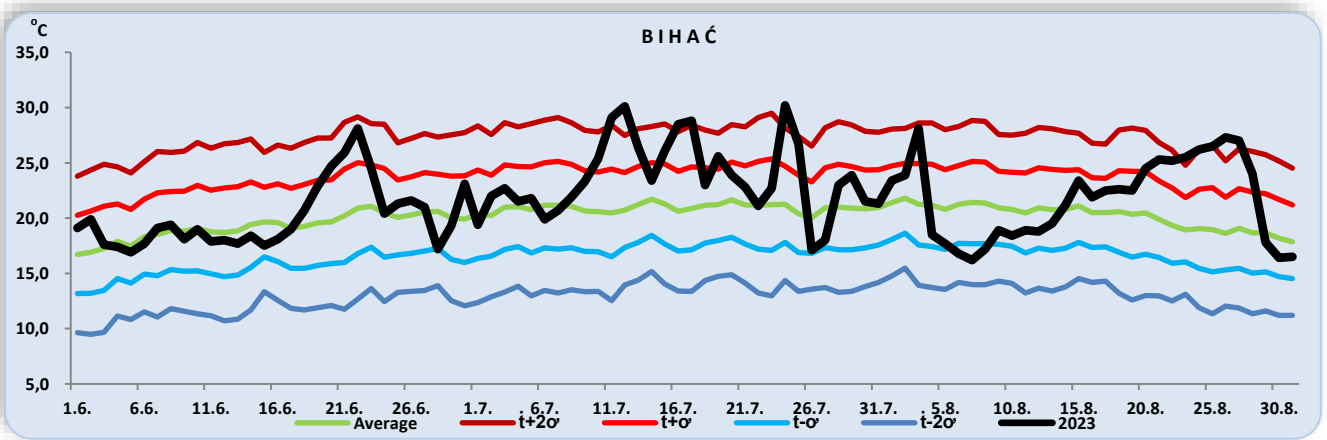
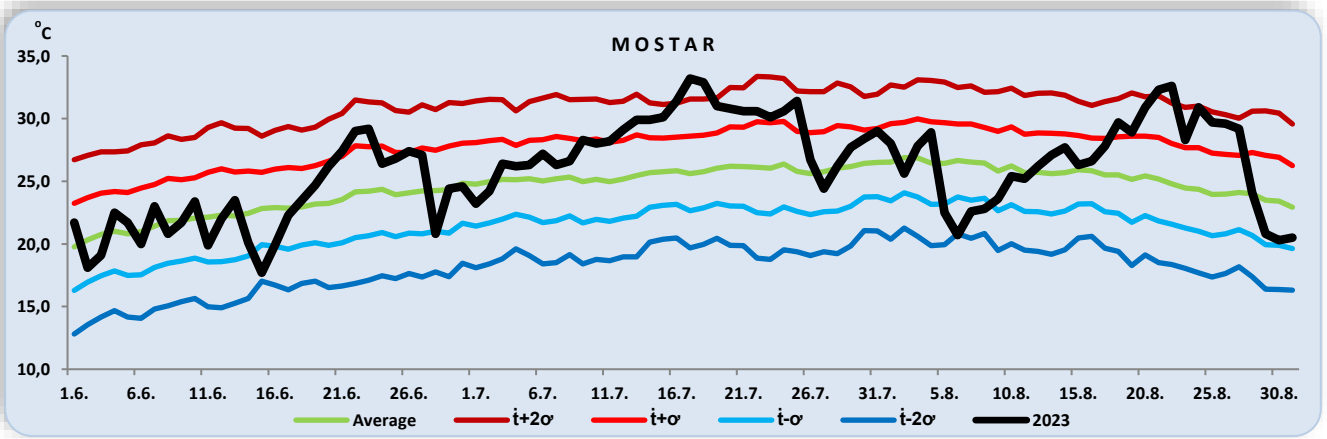
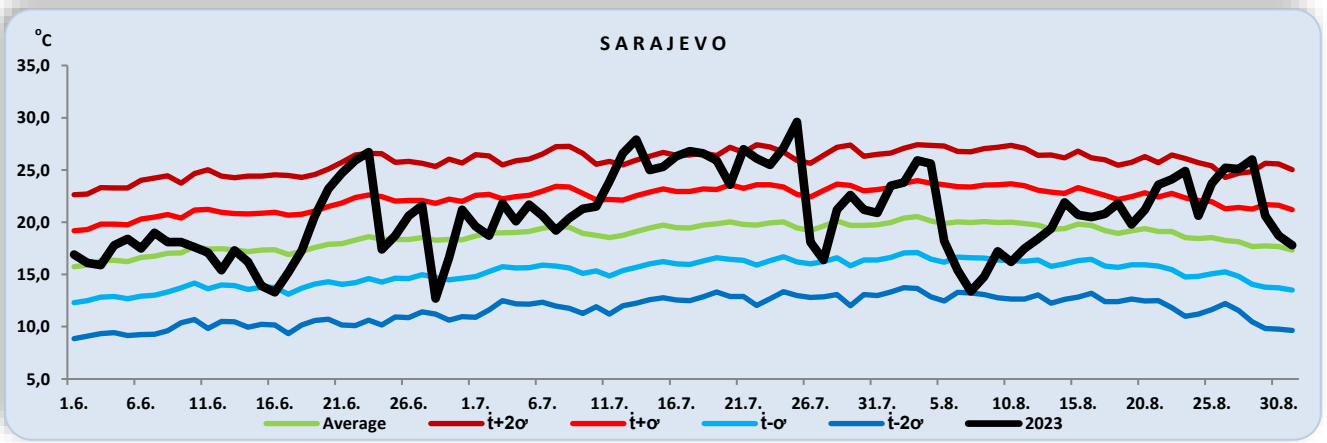
Table 3 Summer temperature in Sarajevo



Map 1 Mean air temperature summer 2023. year (°C)



Map 2 Air temperature during summer 2023. using percentile method compared to the 1991-2020 base period



Graph 1-4 Mean daily air temperatures during summer 2023. Year

Analysis of the monthly amount of precipitation expressed in % of average values shows that during the summer 2023., deviations from normal precipitation amounts ranged from 57 % in Gradacac to 264 % in Neum. By percentage amounts of precipitation are classified into categories of dry, normal and wet.

The measured amounts of precipitation were in the range of 139 mm in Zenica to 381 mm in Bihac.

STATION	DEVIATION (1991-2020)					PERCENTILES
	<i>mnv</i>	JUNE	JULY	AUGUST	SUMMER <sup>1</sup>	
Bihac	246	151,4	145,7	112,4	138,1	85
Bjelasnica	2067	166,1	50,5	63,7	98,5	61
Bugojno	562	126,0	88,4	85,8	101,9	61
Drvar	485	167,9	70,7	68,0	109,0	59
Gradacac	225	74,6	52,7	33,2	57,2	14
Ivan-sedlo	970	135,3	44,1	104,5	97,8	53
Livno	729	106,2	109,3	138,4	117,2	72
Mostar	99	180,0	22,2	256,9	156,4	88
Neum	9	189,0	//	142,0	264	93
Sarajevo	630	92,6	112,2	99,7	101,1	55
Sanski Most	154	43,4	118,7	74,2	75,1	28
Tuzla	305	125,8	71,4	33,7	84,2	39
Zenica	345	73,8	61,4	38,5	60,1	15

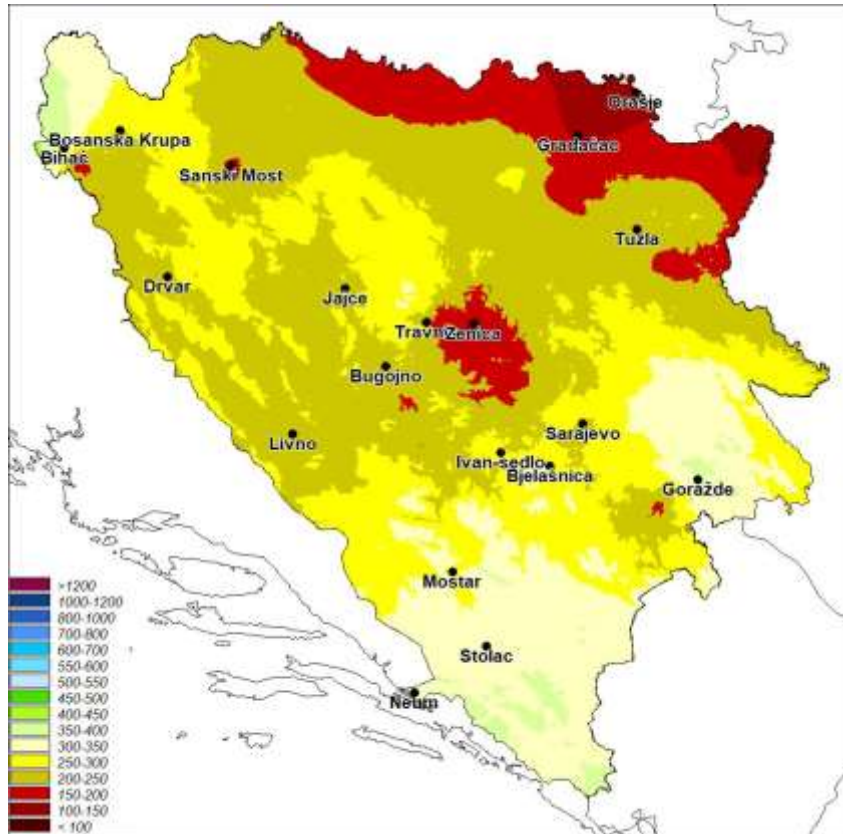
Table 5 Deviation summer precipitation in relation to the climatological standard normal and the corresponding percentiles

STATION	MOUNTH			STATION	MOUNTH		
	June	July	August		June	July	August
Bihac				Livno			
Bjelasnica				Mostar			
Bugojno				Neum			
Drvar				Sanski Most			
Gradacac				Sarajevo			
Ivan Sedlo				Tuzla			
Jajce				Zenica			

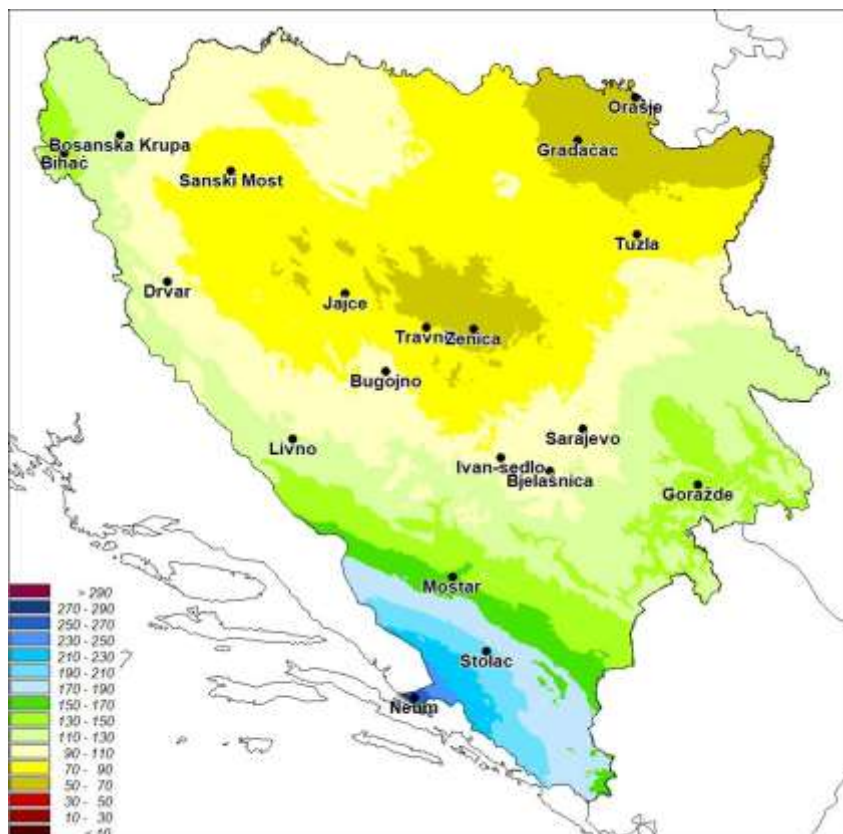


Table 6 Overview of marks on precipitation by month basis percentile

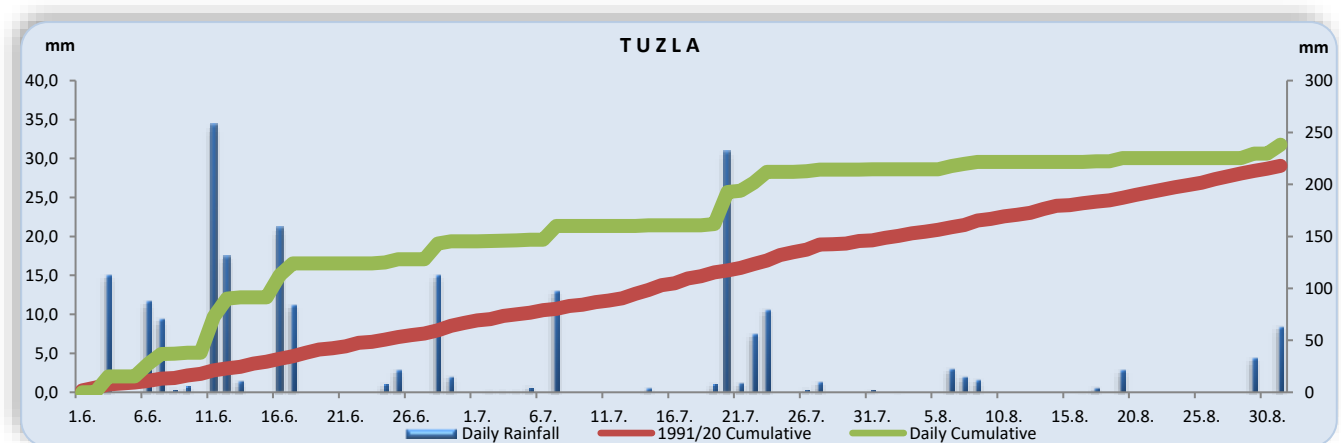
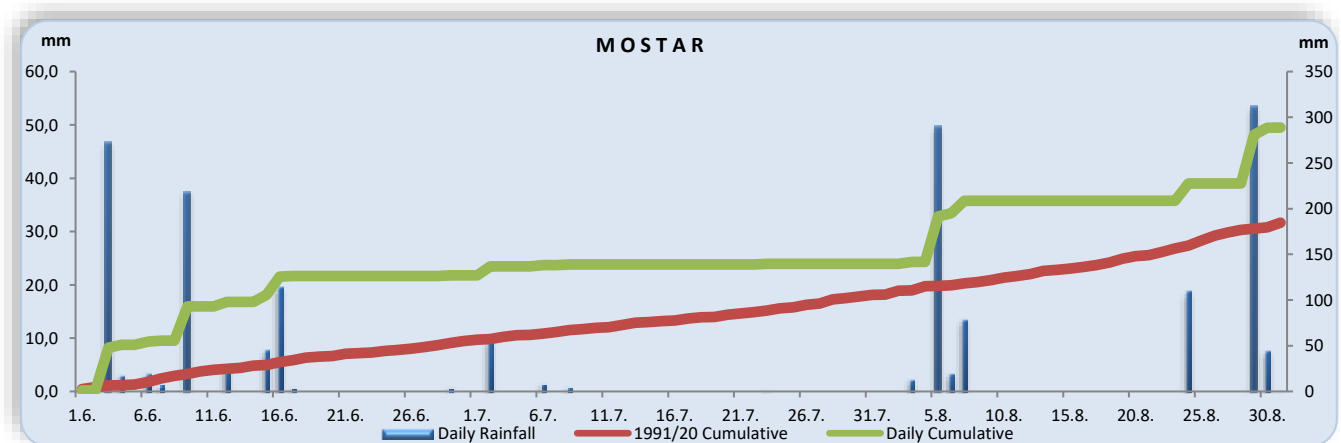
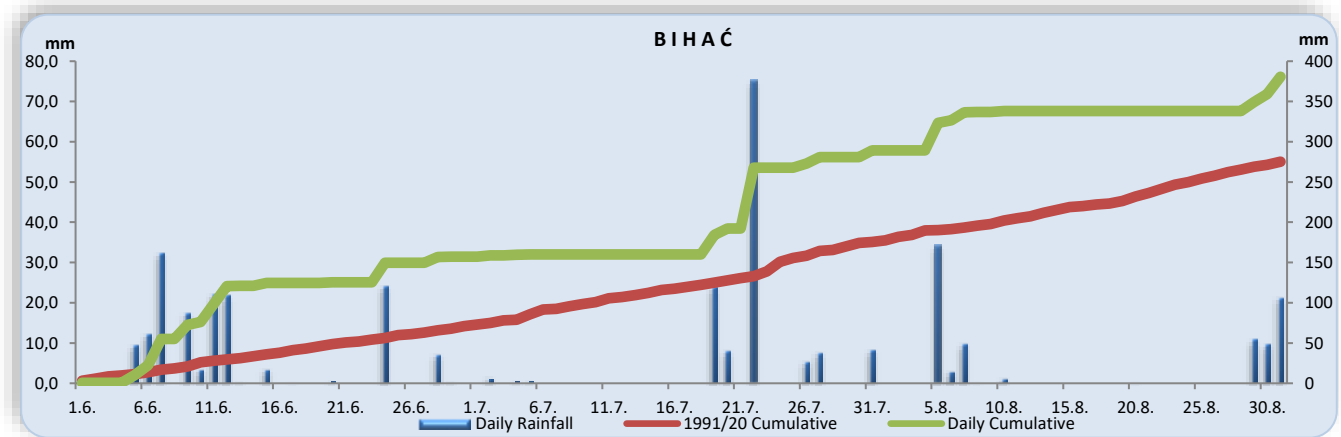
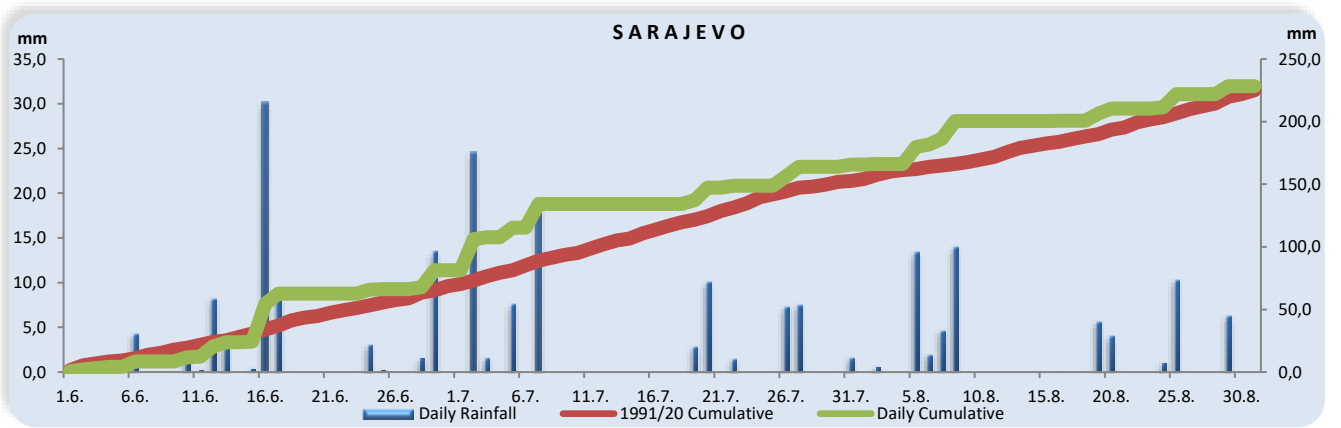
<sup>1</sup>Ostvarene količine padavina u odnosu na prosječne sume



Map 3 Amount precipitation – summer 2023. year (mm)



Map 4 Precipitation sums using percentile method during summer 2023. compared to the base period (1991. – 2020.)



Graph 5-8 daily and cumulative rainfall in the summer 2023 year.



Season		Air Temperature (°C)					Precipitation sums (mm)			
Station	Rank*	33	50	66	Observed value	Rank**	33	50	66	Observed Value
<b>Sarajevo</b>	7	19,6	19,2	18,7	20,8	15	258	228	202	228
<b>Mostar</b>	8	25,1	4,6	24,3	26,1	3	189	158	141	289
<b>Bihac</b>	6	20,6	20,2	19,8	21,8	6	325	274	232	381
<b>Tuzla</b>	7	20,2	19,5	19,0	21,3	22	332	282	251	238
<b>Zenica</b>	6	20,8	20,0	19,6	22,1	26	265	242	193	139
<b>Bugojno</b>	4	19,2	18,5	18,1	20,7	13	248	201	186	219
<b>Gradacac</b>	8	21,9	21,1	20,8	23,1	29	258	240	227	139
<b>Livno</b>	7	19,3	18,6	18,3	20,1	10	211	185	158	213
<b>San Most</b>	6	20,6	19,9	19,6	21,5	26	299	262	228	184
<b>Bjelasnica</b>	7	10,3	9,8	9,4	11,1	14	336	278	247	293

\*Rank – 1981-2010. (period) – warmest season

\*\*Rank – 1981-2010. (period) – highest seasonal precipitation

Country	Seasonal temperature JJA		Seasonal precipitation JJA		High Impact Events
	Observed	SEECOF - 29 climate outlook for temperature	Observed	SEECOF - 29 climate outlook for precipitation	
Bosnia and Herzegovina (FBiH)	Above normal in almost entire Bosnia and Herzegovina	Above normal (20, 30, 50) In Bosnia and Herzegovina)	Normal in central, north entire Bosnia and Herzegovina;  Above normal - Mostar	No predictive signal (33,33,33)	<p>Summer June – AMS Snjeznica 50 mm (precipitation) for 30 min. Local showers (northeast Bosnia) caused flooding on smaller rivers. Flooded houses and destroyed roads.</p> <p>July – Flooding on smaller rivers. Local showers caused flooding on smaller rivers. Flooded houses and destroyed agricultural areas. The wind broke and felled trees. (north Bosnia and Herzegovina). 12.-19.07. very warm and extremely warm period</p>