

CLIMATOLOGICAL ANALYSIS

SEASON

WINTER 2020 - 2021



BOSNIA AND HERZEGOVINA
FEDERATION OF BOSNIA AND HERZEGOVINA
FEDERAL HYDROMETEOROLOGICAL INSTITUTE

CLIMATOLOGICAL ANALYSIS SEASONE WINTER 2020.-2021.

Sarajevo, April 2021.

Mean air temperatures during the climatological winter 2020-2021 (1st December – 28th February 2021.) ranged between 2,8 °C in Livno and 9,5°C in Neum. On the mountain areas air temperatures were in the range of -4,8 °C on Bjelasnica to 1,4 °C on Ivan-sedlo. Temperature deviations from the normal values during the winter, which covers the period (1961.-1990.) were above normal. Deviation of the mean temperature than the average winter temperature ranged from 1,3 °C on Bjelasnica to 4,4 °C in Bihac. By percentage temperature values are classified into the category of warm and extremely warm.

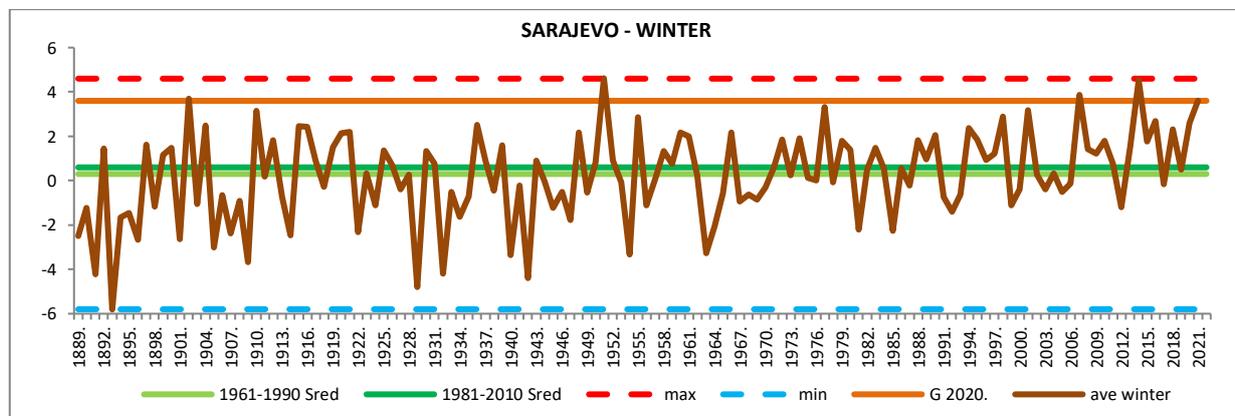
STATION	DEVIATION (°C)				PERCENTILES
	DECEMBER	JANUARY	FEBRUARY	WINTER	
Bihać	2,9	2,8	5,1	3,6	100
Bjelašnica	2,4	-1,1	2,2	1,1	86
Bugojno	4,5	2,9	4,1	3,8	100
Gradačac	2,8	4,1	4,7	3,8	100
Ivan-sedlo	4,2	1,2	3,7	3,0	100
Livno	3,6	1,1	2,8	2,4	100
Mostar	4,2	0,8	2,3	1,9	100
Neum	2,9	1,4	2,2	2,1	100
Sarajevo	4,2	2,2	3,5	3,3	100
Sanski Most	3,6	3,0	3,5	3,4	100
Tuzla	3,9	3,2	3,7	3,5	100
Zenica	4,2	3,0	3,5	3,5	100

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

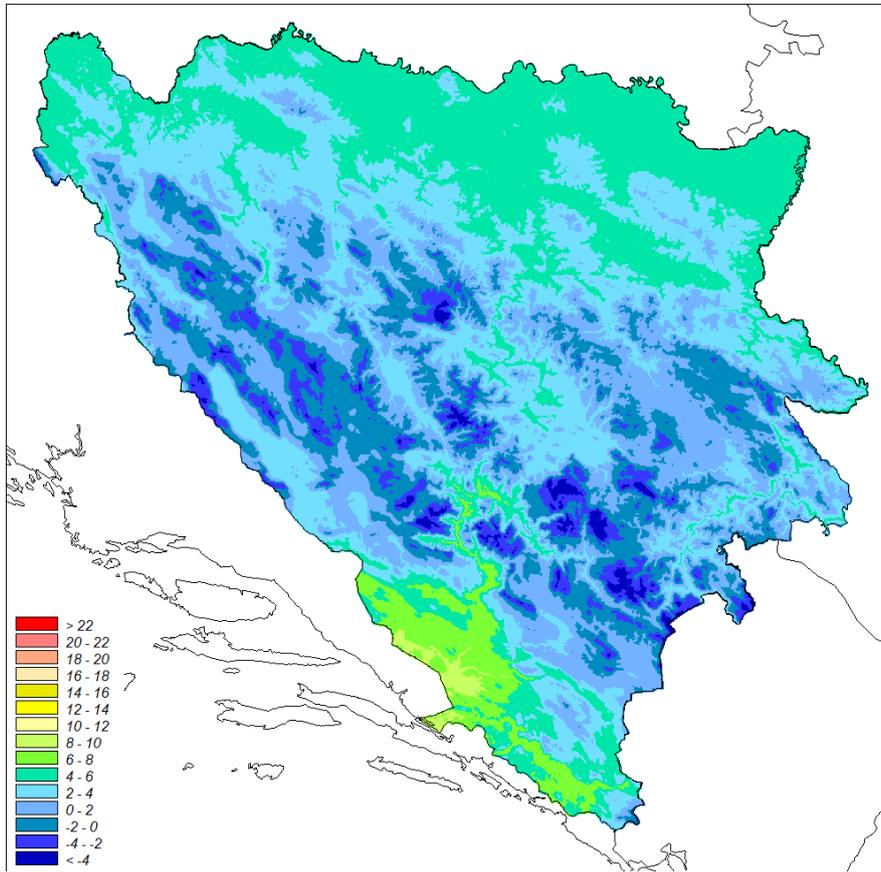
STATION	MOUNTH			STANICA	MOUNTH		
	December	January	February		December	January	February
Bihać	extremely warm	very warm	warm	Neum	extremely warm	very warm	warm
Bjelašnica	extremely warm	very warm	warm	Sarajevo	extremely warm	very warm	warm
Bugojno	very warm	warm	warm	Sanski Most	extremely warm	very warm	warm
Gradačac	very warm	warm	warm	Stolac	extremely warm	very warm	warm
Ivan-sedlo	extremely warm	very warm	warm	Tuzla	extremely warm	very warm	warm
Livno	extremely warm	very warm	warm	Zenica	extremely warm	very warm	warm
Mostar	extremely warm	very warm	warm				



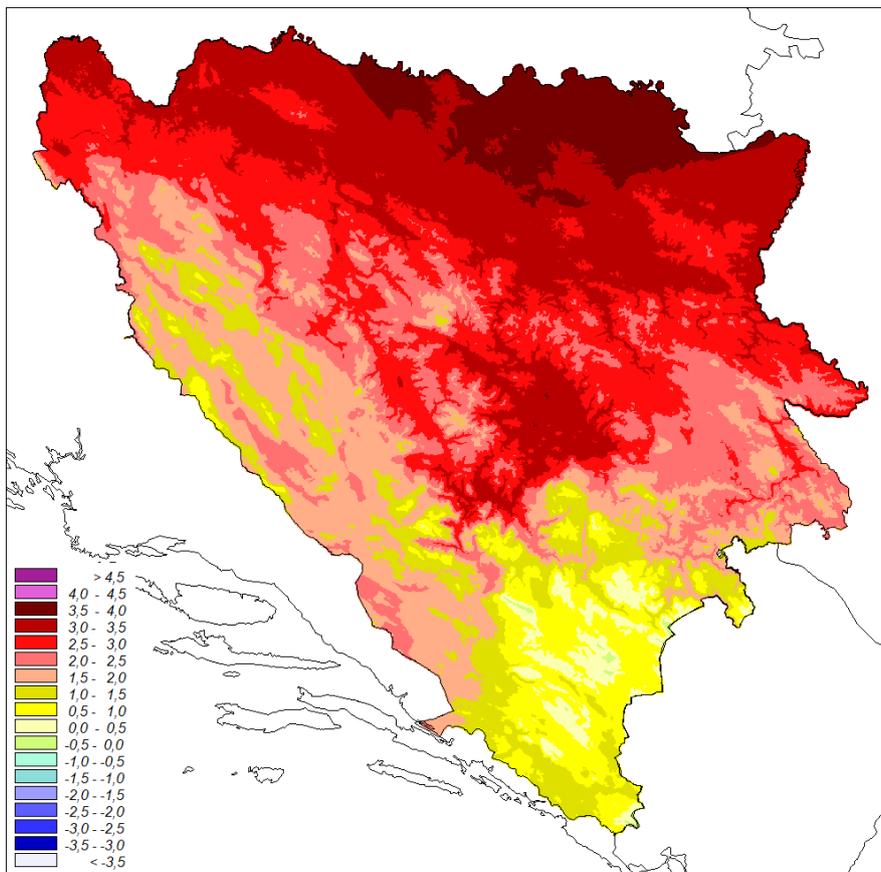
Table 2 Overview of marks mean temperature during the winter months by the method of percentiles



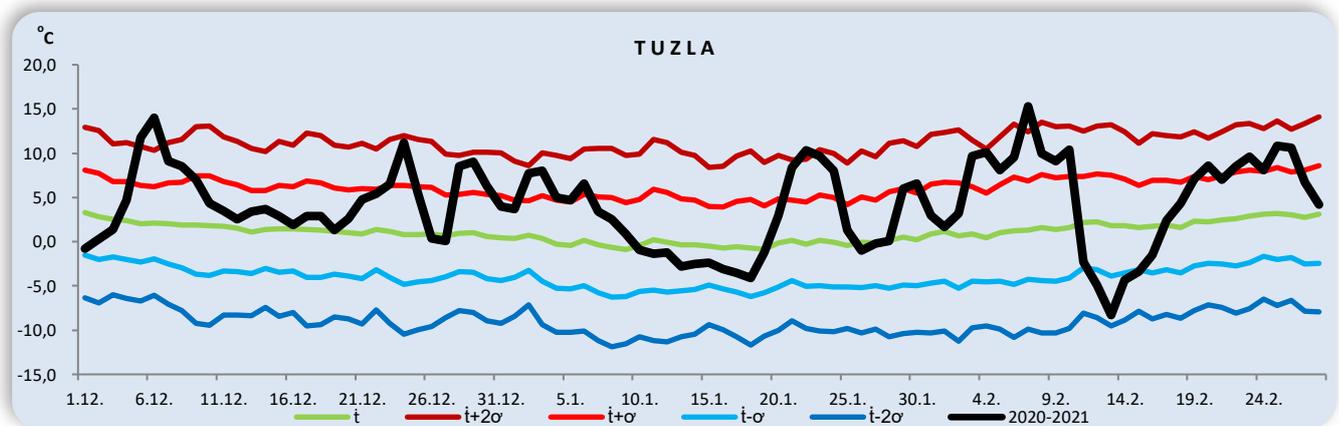
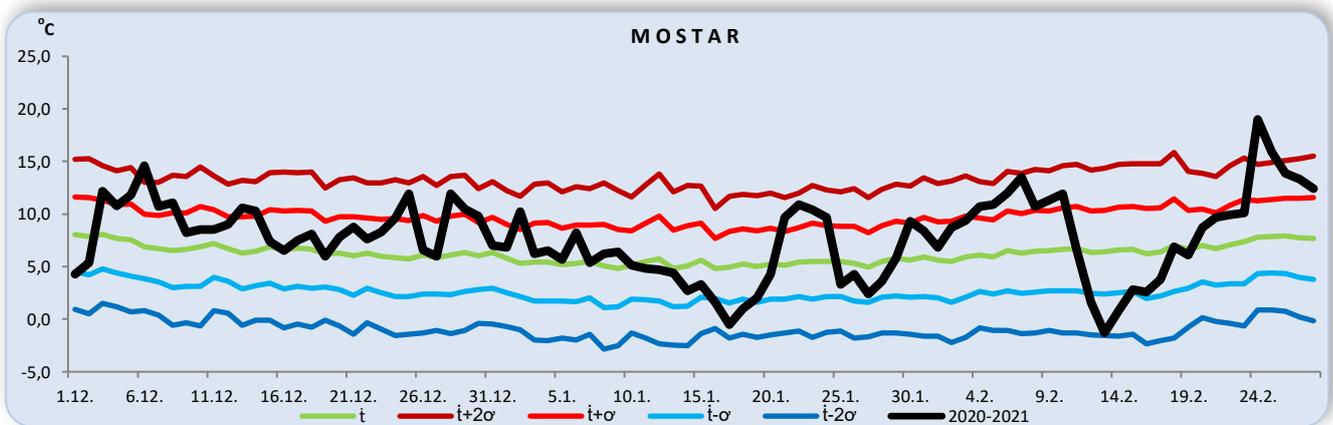
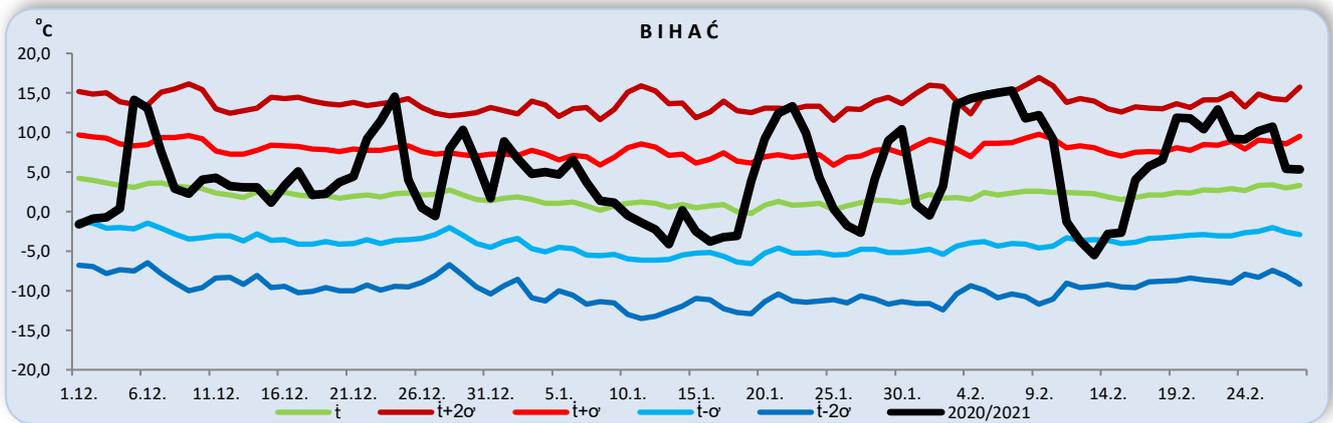
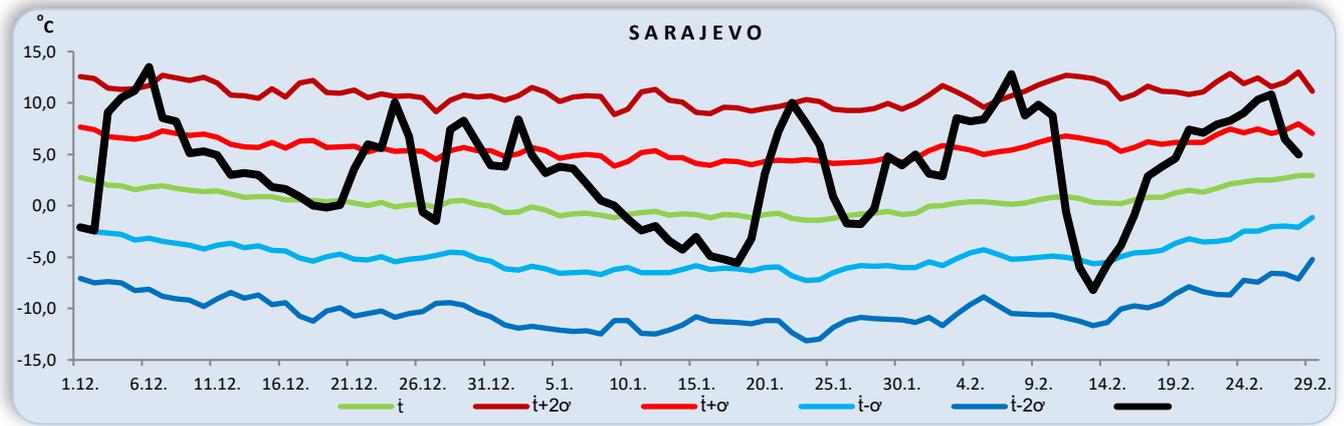
Graph 1 Winter temperature (°C) in Sarajevo



Map 1 Mean air temperature winter 2020.-2021. year (°C)



Map 2 Air temperature during winter 2020.-2021. using percentile method compared to the 1961-1990 base period



Graph 2-5 Mean daily air temperatures during winter 2020.-2021. year

Analysis of the monthly amount of precipitation expressed in % of average values shows that during the winter 2020 - 2021, deviations from normal precipitation amounts ranged from 87,4 % in Tuzla to 194,9 % in Livno. By percentage amounts of precipitation are classified into categories of normal, wet, very wet and extremely wet. The measured amounts of precipitation were in the range of 161,7 mm in Tuzla to 733,5 mm in Mostar.

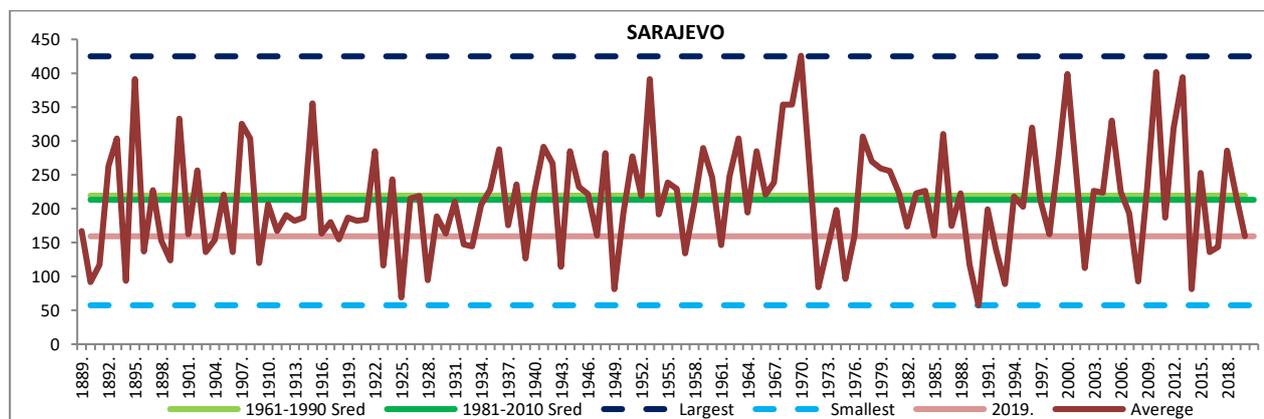
STATION	DEVIATION (%)				PERCENTILES
	DECEMBER	JANUARY	FEBRUARY	WINTER ¹	
Bihać	136,2	199,7	75,0	135,8	87
Bjelašnica	165,8	228,2	71,3	153,4	84
Bugojno	207,2	146,3	69,4	148,9	93
Gradačac	149,0	89,9	34,9	92,2	39
Ivan-sedlo	190,0	189,0	93,1	156,9	95
Livno	262,9	197,5	100,7	194,9	100
Mostar	185,6	144,1	107,1	147,6	90
Neum	150,6	202,2	56,9	130,6	80
Sarajevo	168,7	157,4	86,4	140,3	88
Sanski Most	167,1	165,6	64,8	136,8	86
Tuzla	99,0	107,6	50,6	87,4	24
Zenica	158,6	139,7	48,4	121,2	76

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

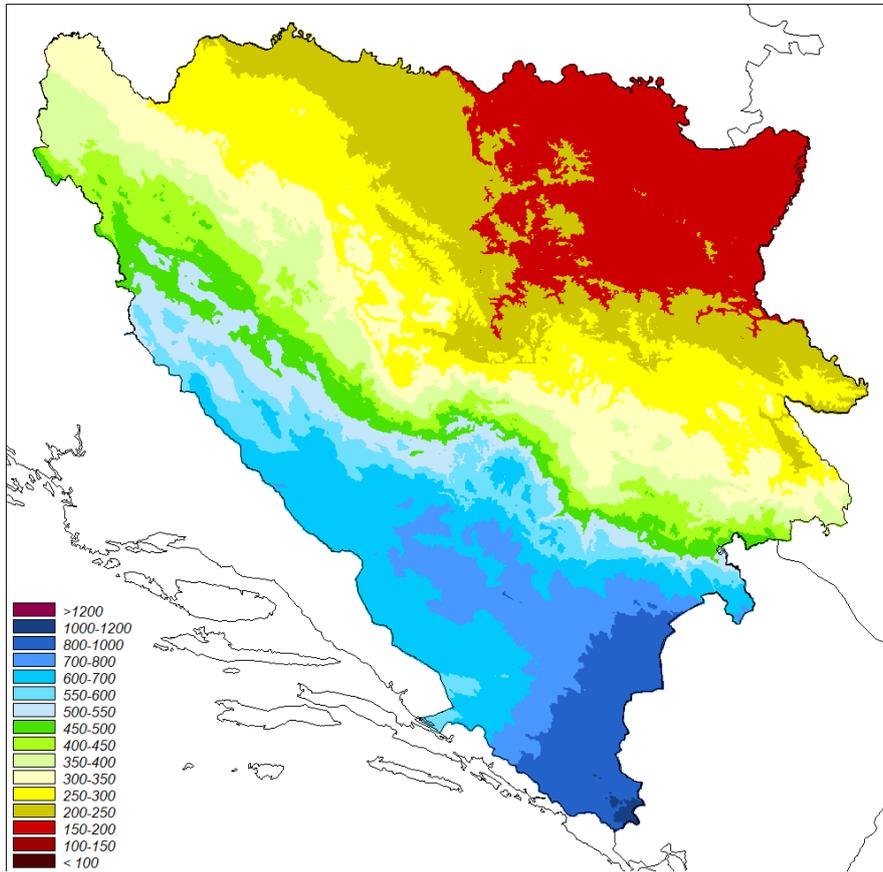
STATION	MOUNTH			STATION	MOUNTH		
	December	January	February		December	January	February
Bihać	Very wet	Extremely wet	Very wet	Livno	Extremely wet	Very wet	Very wet
Bjelašnica	Very wet	Extremely wet	Very wet	Mostar	Very wet	Very wet	Very wet
Bugojno	Very wet	Very wet	Very wet	Sarajevo	Very wet	Very wet	Very wet
Drvar	Very wet	Very wet	Very wet	Sanski Most	Very wet	Very wet	Very wet
Gradačac	Very wet	Very wet	Very wet	Stolac	Very wet	Very wet	Very wet
Ivan Sedlo	Very wet	Very wet	Very wet	Tuzla	Very wet	Very wet	Very wet
				Zenica	Very wet	Very wet	Very wet



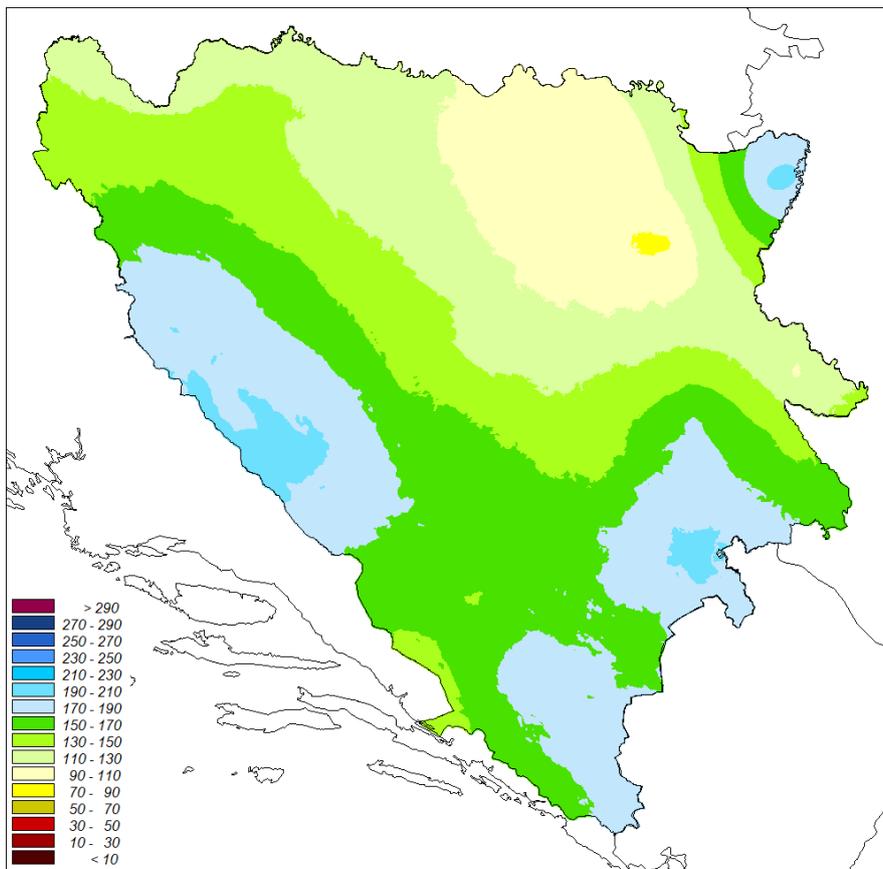
Table 6 Overview of marks on precipitation by month basis percentile



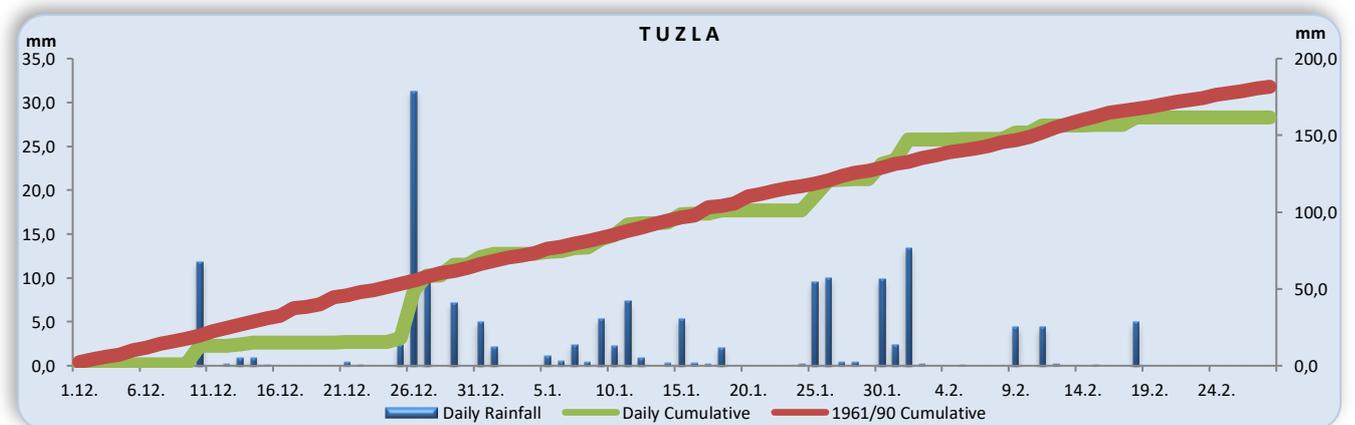
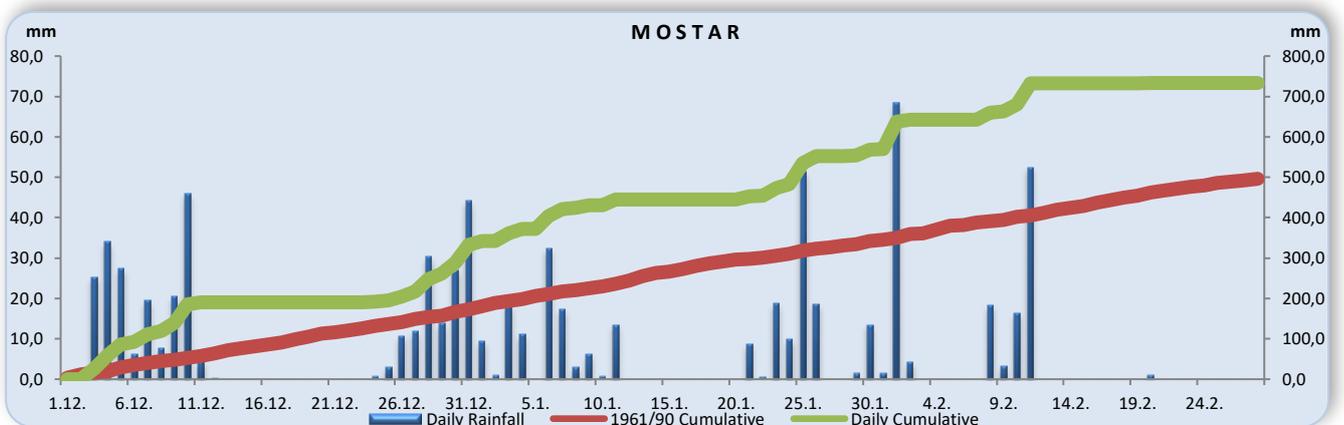
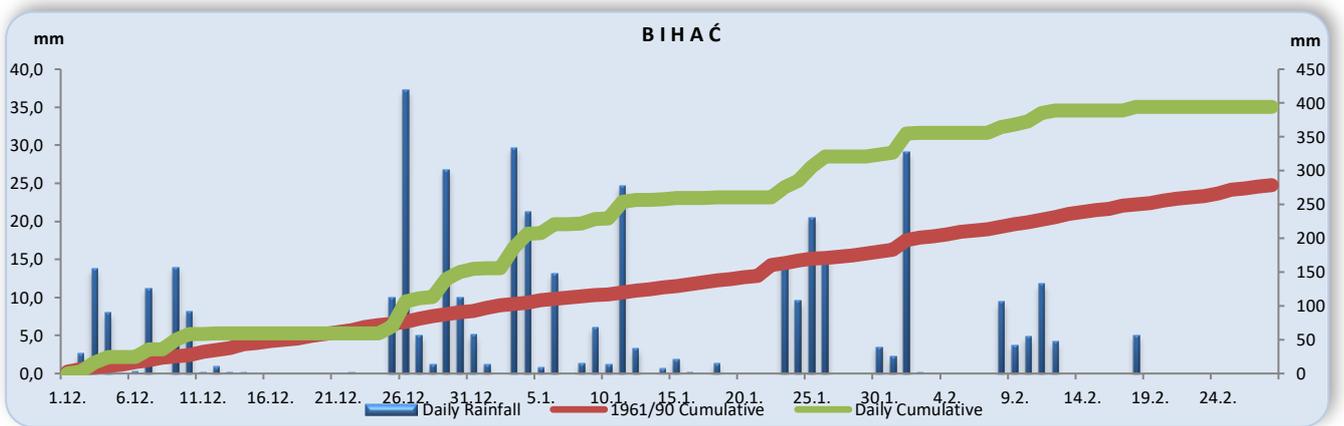
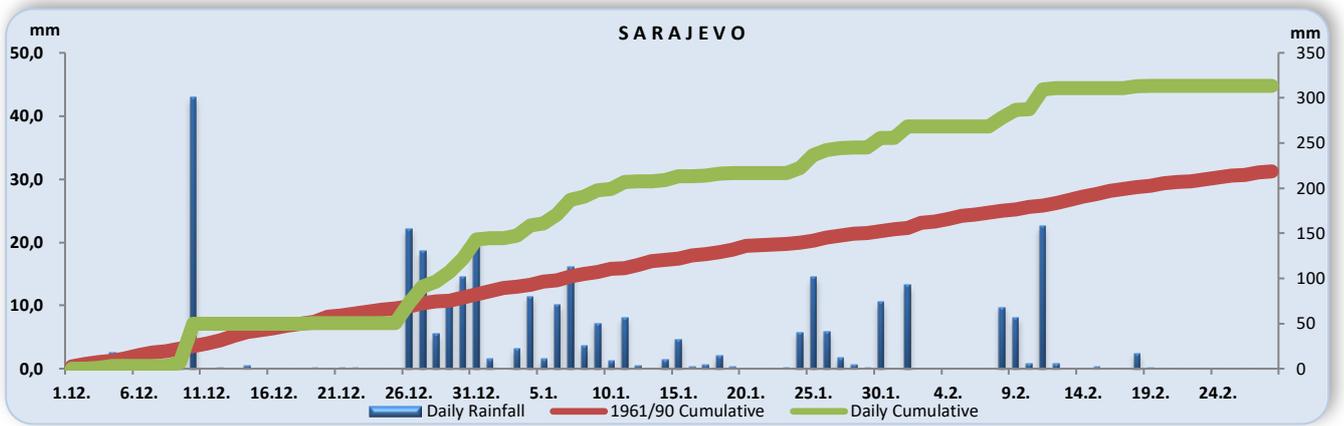
Graph 6 Winter precipitation (mm) in Sarajevo



Map 3 Amount precipitation – winter 2020.-2021. year (mm)



Map 4 Precipitation sums using percentile method during winter 2020.-2021. compared to the base period (1961 – 1990)



Graph 5-8 daily and cumulative rainfall in the winter 2020. - 2021. year.

Season		Air Temperature (°C)					Precipitation sums (mm)			
Station	Rank*	33	50	66	Observed value	Rank**	33	50	66	Observed Value
Sarajevo	1	1,4	0,9	0,2	5,0	7	220	201	170	313
Mostar	1	6,8	6,2	5,8	7,8	5	565	386	333	734
Bihać	1	2,9	2,0	1,4	5,0	3	365	290	264	394
Tuzla	1	1,9	1,1	0,6	4,2	18	190	169	153	162
Zenica	1	1,6	0,8	0,6	4,1	8	181	158	145	202
Bugojno	1	0,8	0,3	-0,3	3,4	3	330	252	236	277
Gradačac	2	2,8	1,9	1,1	5,0	17	200	169	139	171
Livno	1	1,4	0,5	0,3	2,8	2	334	268	232	612
San Most	2	2,0	1,3	0,8	4,0	7	263	206	184	293
Bjelašnica	8	-5,3	-6,0	-6,5	-4,8	8	330	252	236	375

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

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

Country	Seasonal temperature DJF		Seasonal precipitation DJF		High Impact Events
	Observed	SEECOF - 21 climate outlook for temperature	Observed	SEECOF - 21 climate outlook for precipitation	
Bosnia and Herzegovina (FBiH)	Above normal in almost entire Bosnia and Herzegovina	Above normal (20, 30, 50) in entire Bosnia and Herzegovina)	Below normal north east Bosnia; Above normal west, south, south east and central Bosnia and Herzegovina,	No predictive signal (33,34,33)	4 th warmest winter in Sarajevo since 1888. New temperature max in February.

¹ The actual amount of precipitation compared to the average sum

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