

CLIMATOLOGICAL ANALYSIS

SEASON

WINTER 2021 - 2022



BOSNIA AND HERZEGOVINA
FEDERATION OF BOSNIA AND HERZEGOVINA
FEDERAL HYDROMETEOROLOGICAL INSTITUTE

CLIMATOLOGICAL ANALYSIS SEASONE WINTER 2021.-2022.

Sarajevo, April 2022.

Mean air temperatures during the climatological winter 2021-2022 (1st December 2021. – 28th February 2022.) ranged between 1,3 °C in Bugojno and 9,4°C in Neum. On the mountain areas air temperatures were in the range of -6,5 °C on Bjelasnica to 1,1 °C on Ivan-sedlo. Temperature deviations from the normal values during the winter, which covers the period (1991.-2020.) were above normal. Deviation of the mean temperature than the average winter temperature ranged from -0,7 °C on Bjelasnica to 2,3 °C in Gradacac. By percentage temperature values are classified into the category of normal and warm.

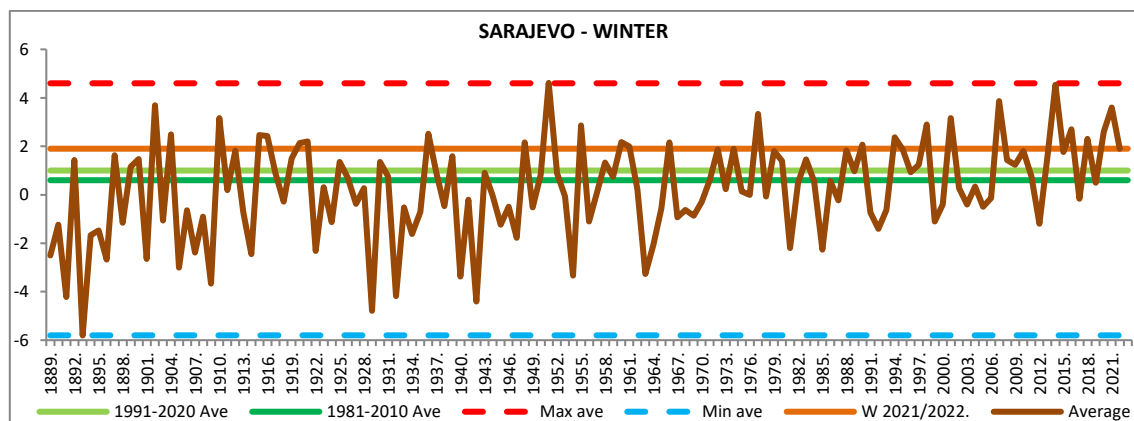
STATION	DEVIATION (°C)					PERCENTILES
	Alt	DECEMBER	JANUARY	FEBRUARY	WINTER	
Bihać	246	1,5	-0,2	3,0	1,4	80
Bjelašnica	2067	-1,1	-1,8	0,8	-0,7	32
Bugojno	562	2,3	-1,0	2,4	0,6	64
Drvar	485	2,5	0,3	2,3	1,7	86
Gradačac	225	1,8	1,5	3,6	2,3	87
Jajce	428	1,7	0,0	2,4	1,1	82
Livno	724	1,8	0,4	1,9	1,3	85
Mostar	99	1,0	0,5	1,6	1,0	88
Neum	9	1,0	0,2	1,3	0,9	52
Sarajevo	630	2,5	-1,0	2,0	0,8	72
Sanski Most	154	2,0	-0,2	2,6	1,5	84
Stolac	72		0,1	1,0	0,5	67
Tuzla	305	1,6	0,5	2,4	1,5	84
Zenica	345	2,2	-0,3	2,3	1,4	83

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

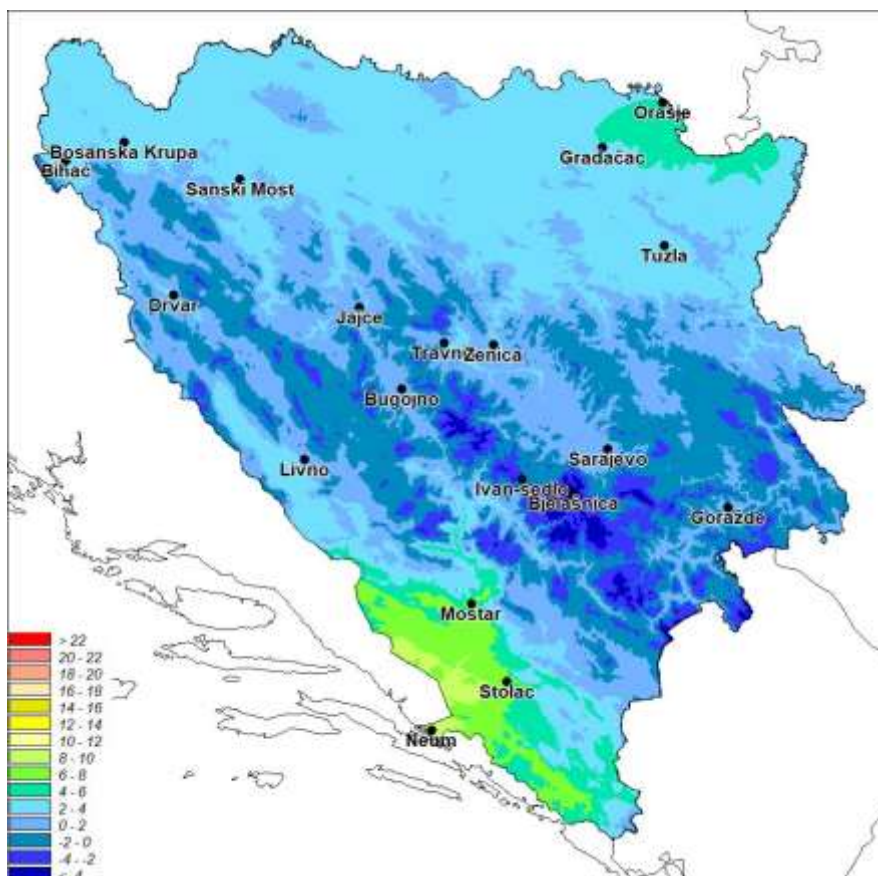
STATION	MOUNTH			STANICA	MOUNTH		
	December	January	February		December	January	February
Bihać				Mostar			
Bjelašnica				Neum			
Bugojno				Sarajevo			
Drvar				Sanski Most			
Gradačac				Stolac			
Ivan-sedlo				Tuzla			
Livno				Zenica			

	extremely warm	very warm	warm	normal	cold	very cold	extremely cold
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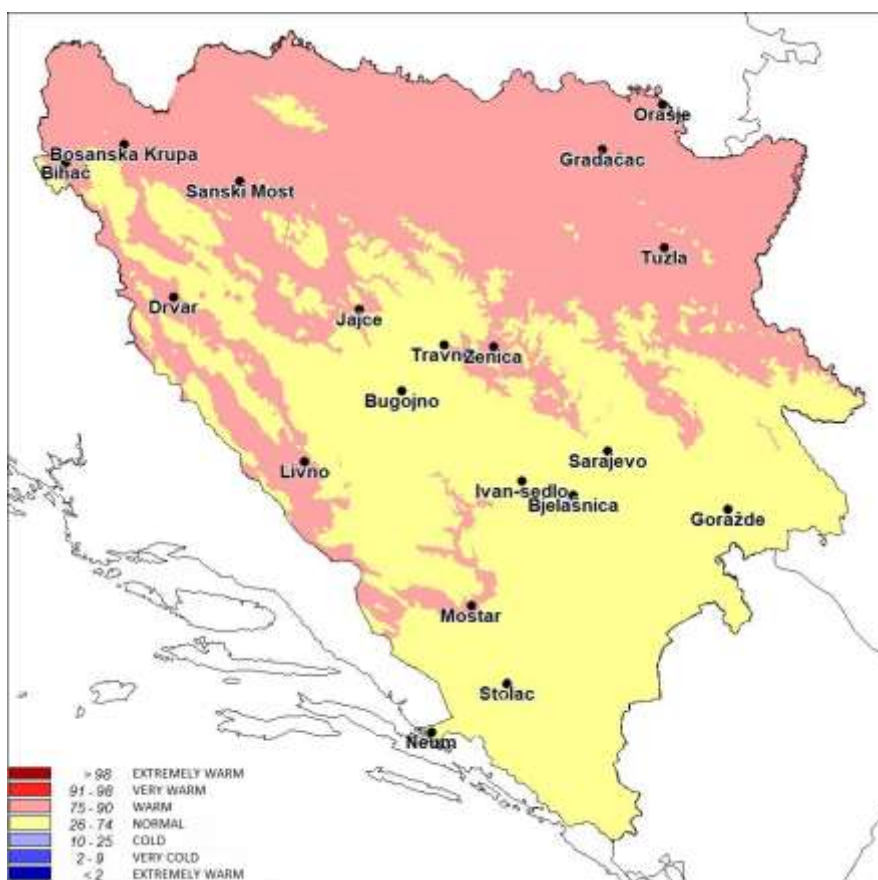
Table 2 Overview of marks mean temperature during the winter months by the method of percentiles



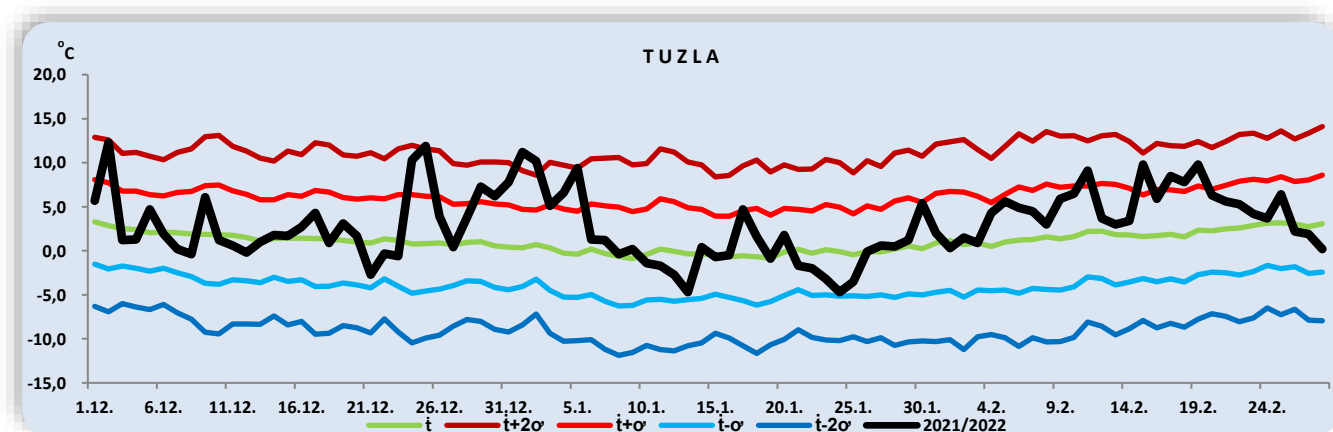
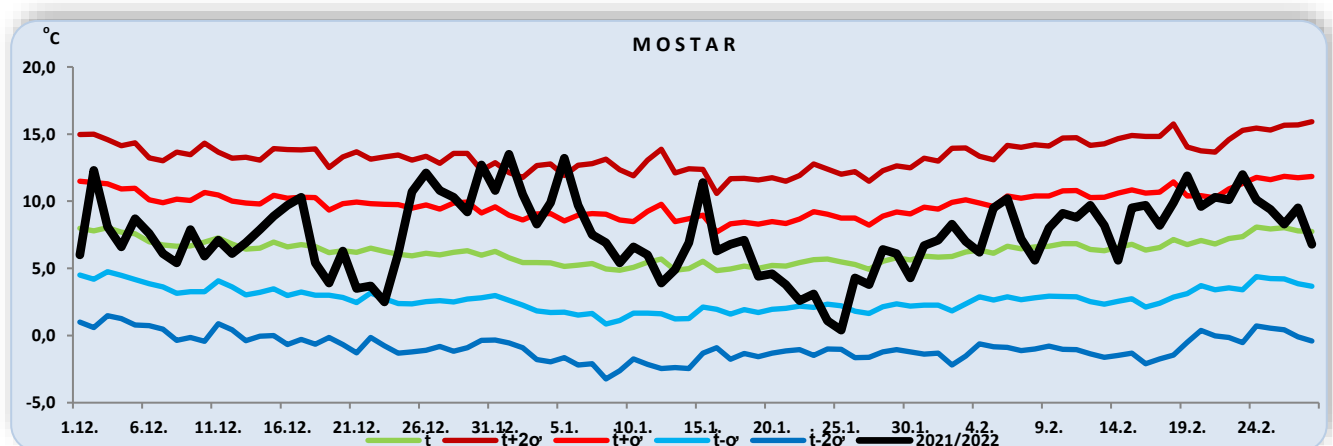
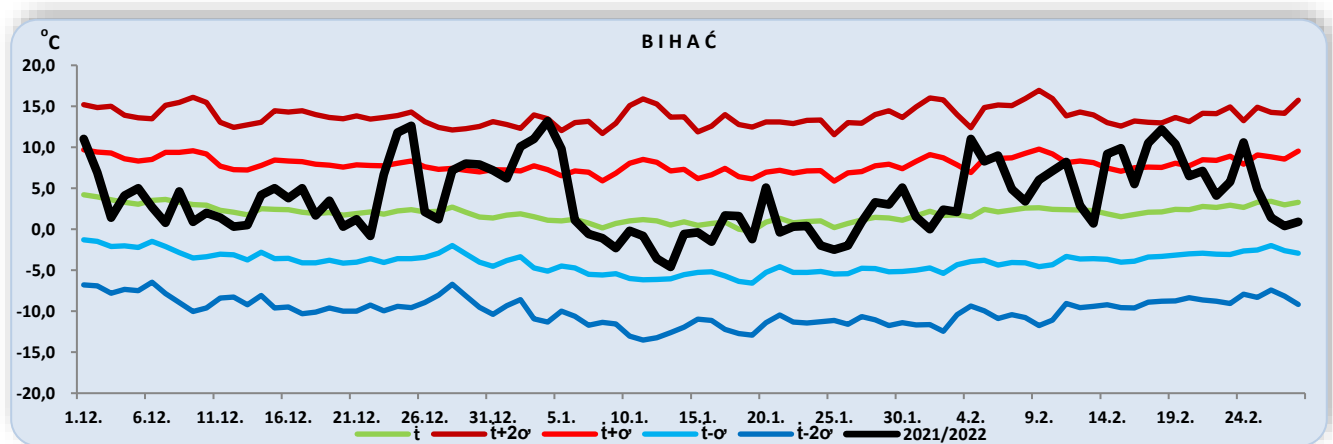
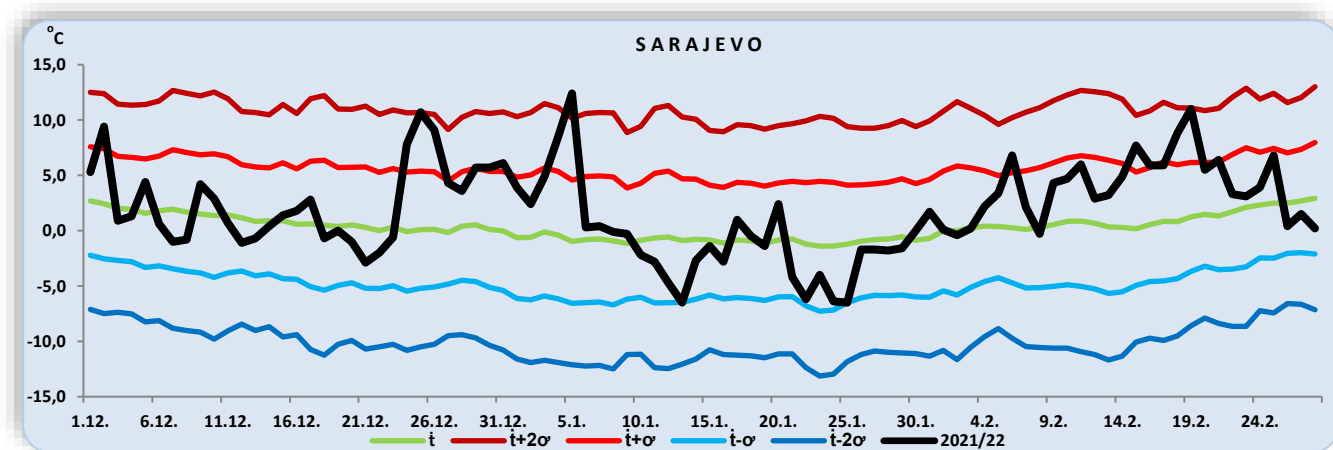
Graph 1 Winter temperature (°C) in Sarajevo



Map 1 Mean air temperature winter 2021.-2022. year (°C)



Map 2 Air temperature during winter 2021.-2022. using percentile method compared to the 1991-2020 base period



Graph 2-5 Mean daily air temperatures during winter 2021.-2022. year

Analysis of the monthly amount of precipitation expressed in % of average values shows that during the winter 2021 - 2022, deviations from normal precipitation amounts ranged from 68% in Stolac to 124 % in Gradacac. By percentage amounts of precipitation are classified into categories of normal and wet.

The measured amounts of precipitation were in the range of 151mm in Tuzla to 388 mm in Mostar.

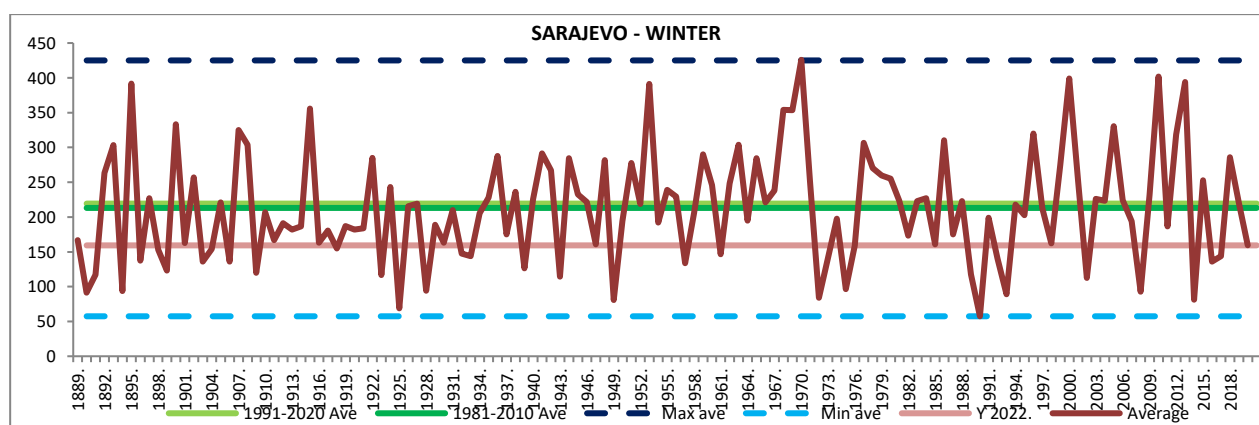
STATION	DEVIATION (%)					PERCENTILES
	Alt	DECEMBER	JANUARY	FEBRUARY	WINTER ¹	
Bihać	246	106,8	58,8	65,8	78,5	29
Bjelašnica	2067	122,9	79,4	86,8	97,9	55
Bugojno	562	166,0	47,7	87,9	108,0	63
Drvar	485	154,2	52,7	67,2	102,	54
Gradacac	225	179,0	37,8	156,7	124,3	77
Jajce	428	205,3	45,3	84,4	118,2	71
Livno	729	167,8	13,5	67,3	94,7	48
Mostar	99	163,2	6,6	65,4	86,3	41
Sarajevo	630	172,8	68,5	57,7	106,6	65
Sanski Most	154	135,3	73,3	45,6	94,2	47
Stolac	72	98,3	4,3	83,2	67,6	23
Tuzla	305	141,6	40,6	31,1	83,8	31
Zenica	345	179,6	42,1	40,4	105,5	55

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

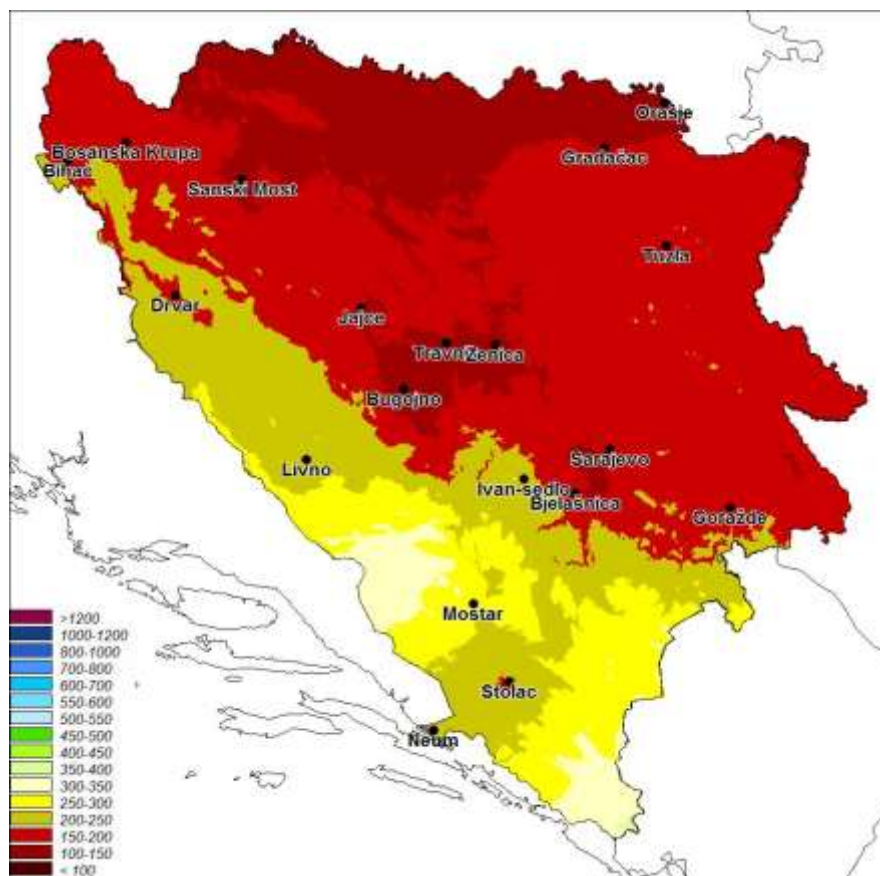
STATION	MOUNTH			STATION	MOUNTH		
	December	January	February		December	January	February
Bihać				Livno			
Bjelašnica				Mostar			
Bugojno				Neum			
Drvar				Sanski Most			
Gradačac				Sarajevo			
Jajce				Tuzla			
				Zenica			

	Extremely dry	Very dry	dry	normal	wet	Very wet	Extremely wet
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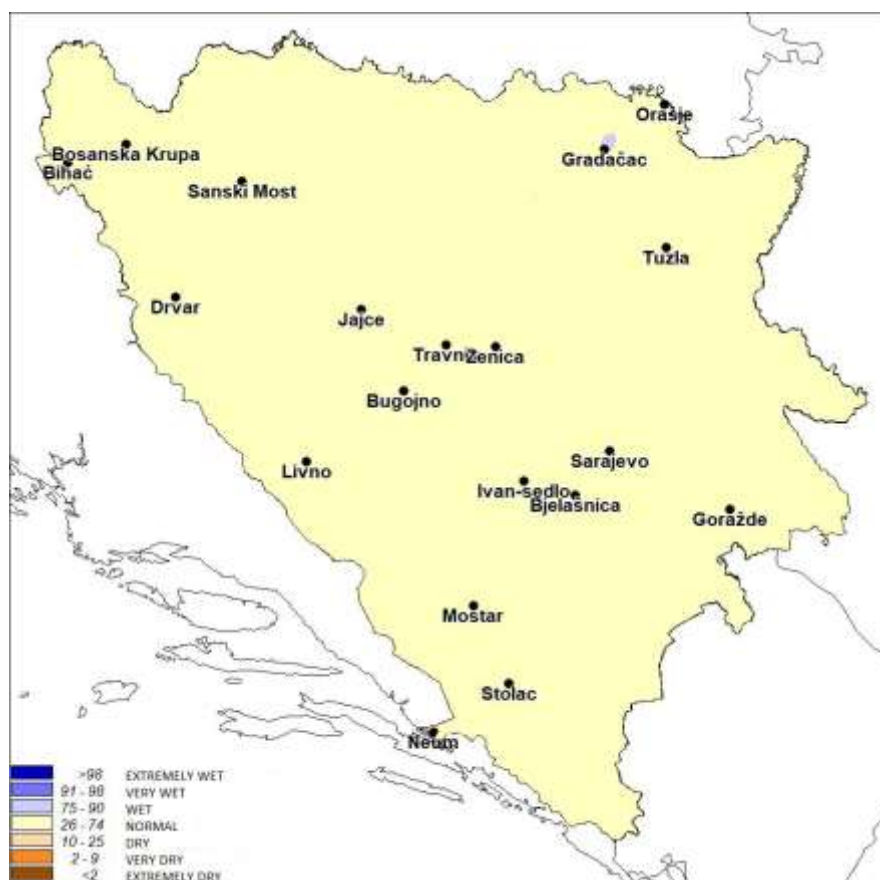
Table 6 Overview of marks on precipitation by month basis percentile



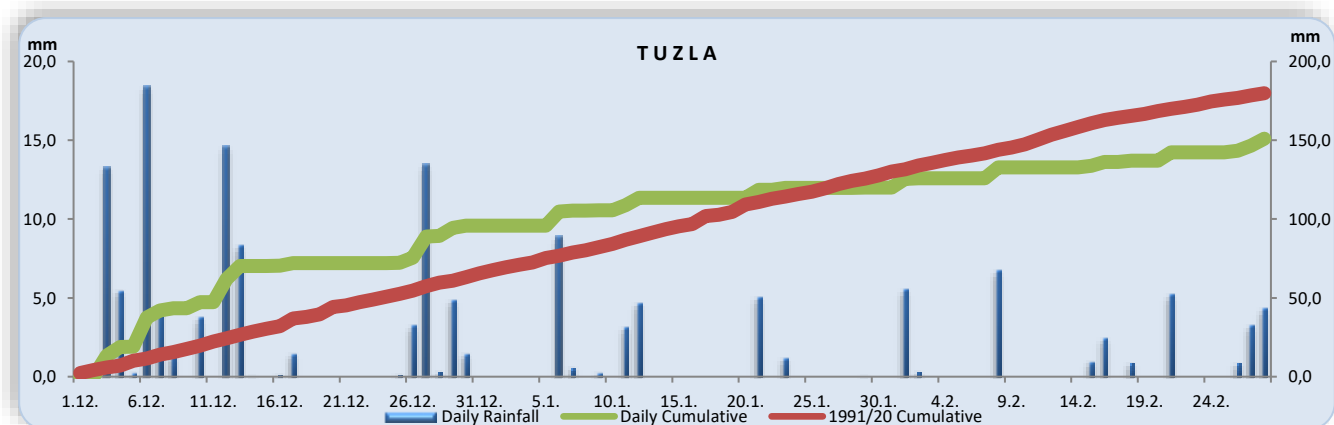
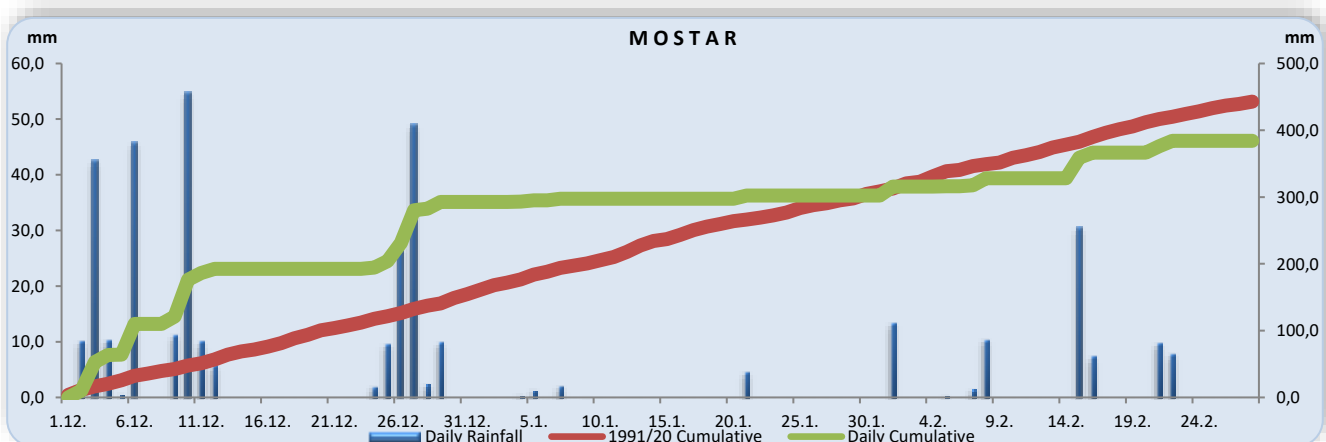
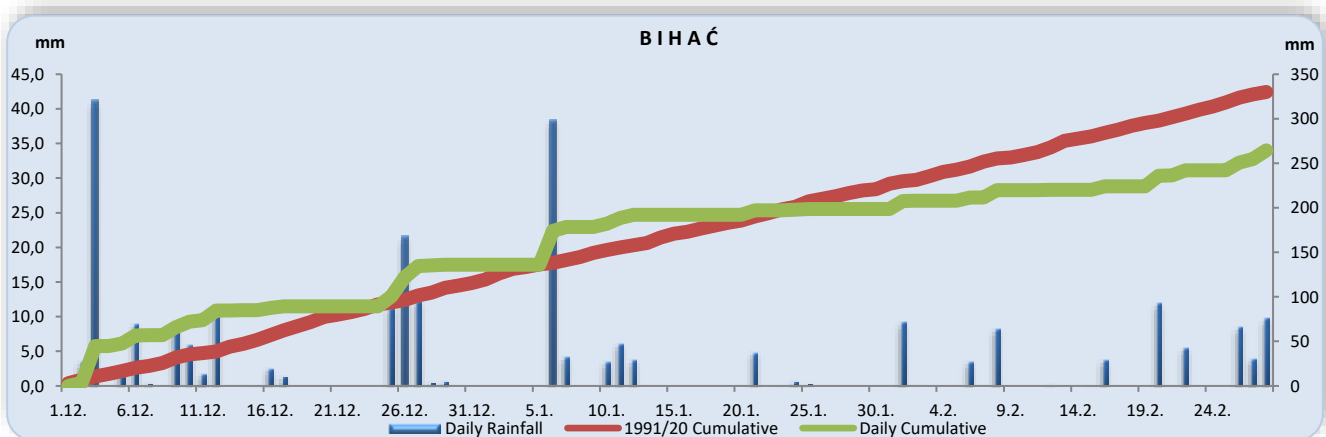
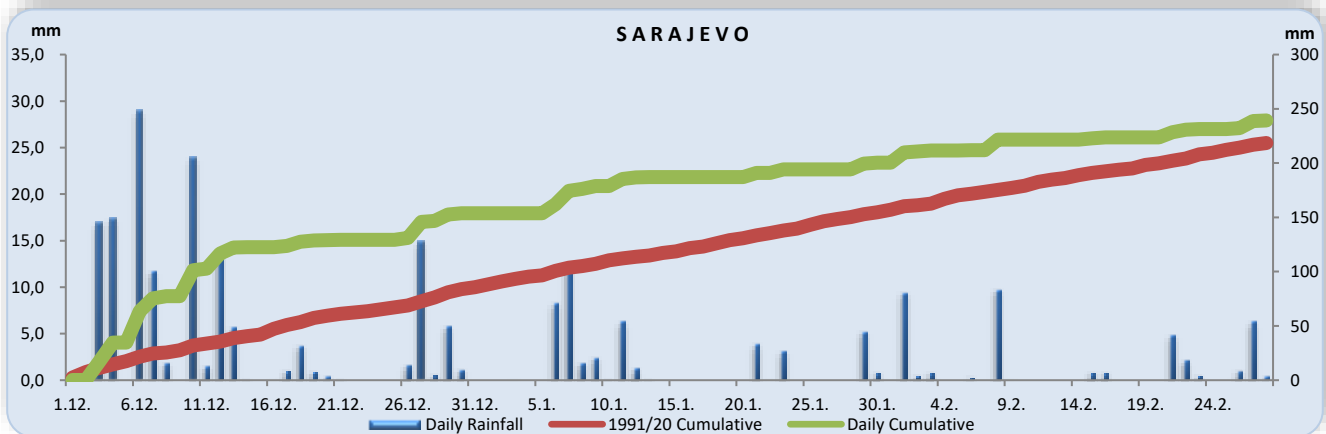
Graph 6 Winter precipitation (mm) in Sarajevo



Map 3 Amount precipitation – winter 2021.-2022. year (mm)



Map 4 Precipitation sums using percentile method during winter 2021.2022. compared to the base period (1991 – 2020.)



Graph 5-8 daily and cumulative rainfall in the winter 2021. - 2022. year.

Season	21/22	Air Temperature (°C)				21/22	Precipitation sums (mm)			
Station	Rank*	33	50	66	Observed value	Rank**	33	50	66	Observed Value
Sarajevo	6	1,4	0,9	0,2	1,9	9	220	201	170	239
Mostar	3	6,8	6,2	5,8	7,6	16	565	386	333	388
Bihać	4	2,9	2,0	1,4	3,9	21	365	290	264	264
Tuzla	3	1,9	1,1	0,6	3,0	22	190	169	153	151
Zenica	3	1,6	0,8	0,6	2,9	10	181	158	145	188
Bugojno	7	0,8	0,3	-0,3	1,3	12	330	252	236	190
Gradačac	3	2,8	1,9	1,1	4,7	9	200	169	139	209
Livno	2	1,4	0,5	0,3	2,4	14	334	268	232	301
San Most	4	2,0	1,3	0,8	3,1	14	263	206	184	225
Bjelašnica	22	-5,3	-6,0	-6,5	-6,5	12	330	252	236	305

*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 - 26 climate outlook for temperature	Observed	SEECOF - 26 climate outlook for precipitation	
Bosnia and Herzegovina (FBiH)	Above normal in almost entire Bosnia and Herzegovina	Above normal (20, 40, 40) in entire Bosnia and Herzegovina	Normal in almost entire Bosnia and Herzegovina; Only region Gradacac wet	No predictive signal (33,34,33)	- New absolute maximum temperature at 4 weather stations in January (Mostar, Zenica, Stolac and Livno). - 27th warmest winter for Sarajevo since 1888, 14th warmest winter for Mostar. - 43rd wettest winter for Sarajevo since 1888. - The highest height of snow cover in the cities was 20 cm

¹ The actual amount of precipitation compared to the average sum

Photo: Zijad Omerovic

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Analisis prepared: Dženan Zulum