

CLIMATOLOGICAL ANALYSIS

SEASON

WINTER 2018/2019



BOSNIA AND HERZEGOVINA
FEDERATION OF BOSNIA AND HERZEGOVINA
FEDERAL HYDROMETEOROLOGICAL INSTITUTE

CLIMATOLOGICAL ANALYSIS SEASONE WINTER 2018 – 2019.

Sarajevo, March 2019.

Mean air temperatures during the climatological winter 2018 - 2019 (1st December 2018. – 28th February 2018.) ranged between 0,5 °C in Bugojno and Livno and 8,3°C in Neum. On the mountain areas air temperatures were in the range of -7,3 °C on Bjelasnica to -1,5 °C on Ivan Sedlo. Temperature deviations from the normal values during the winter, which covers the period (1961.-1990.) were near normal and positive. Deviation of the mean temperature than the average winter temperature ranged from -1,4 °C on Bjelasnica to 2,2 °C in Gradacac. By percentage temperature values are classified into the category of normal and warm.

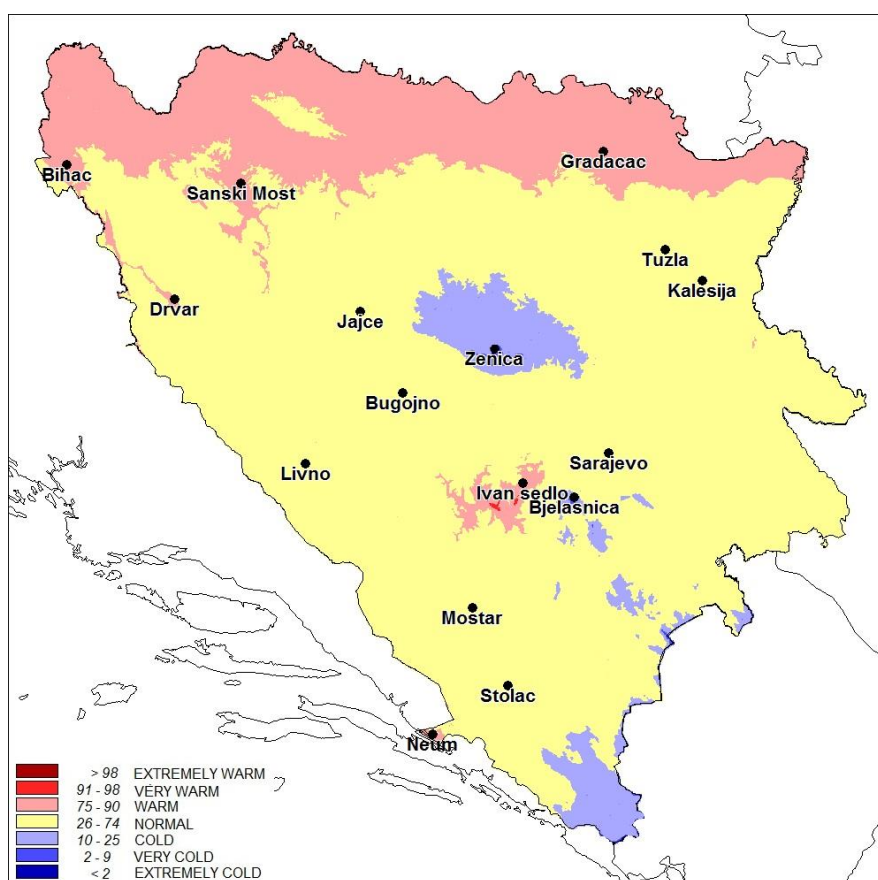
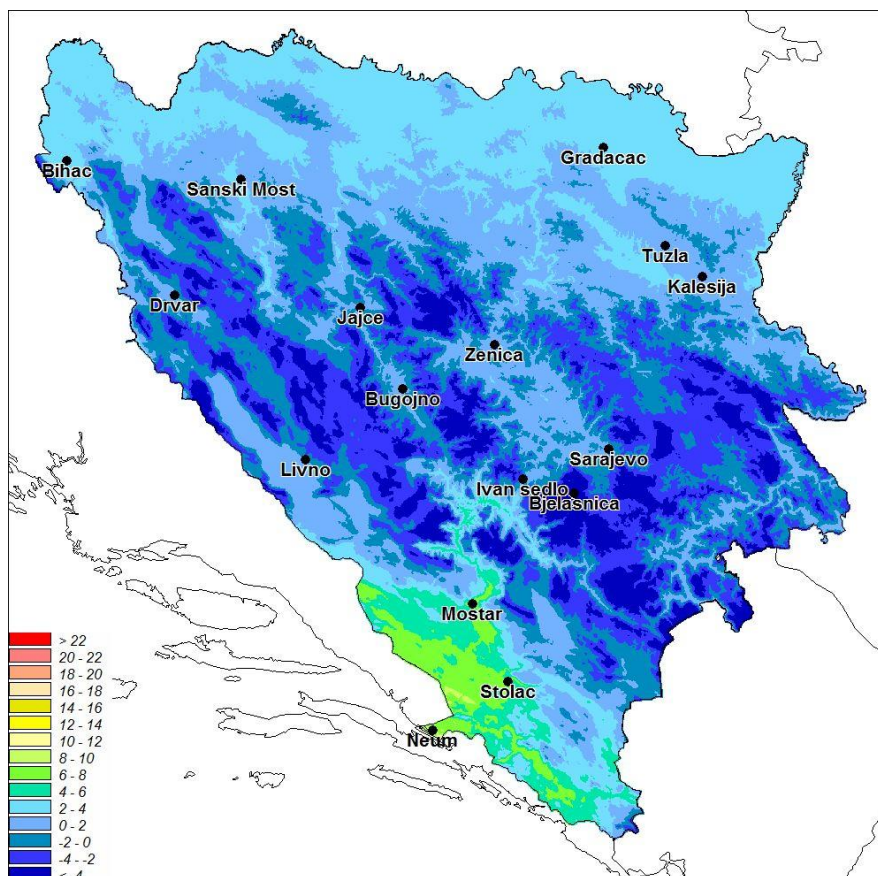
STATION	DEVIATION (°C)				PERCENTILES
	DECEMBER	JANUARY	FEBRUARY	WINTER	
Bihać	1,3	1,0	3,1	1,8	79
Bjelašnica	-1,3	-2,8	0,0	-1,4	16
Bugojno	0,7	0,1	2,0	0,9	68
Drvar	0,5	-0,7	2,3	0,9	76
Gradačac	1,9	1,3	3,4	2,2	87
Ivan Sedlo	0,0	-1,0	1,2	0,0	84
Jajce	0,0	0,4	1,6	0,6	61
Livno	-0,1	-1,2	2,0	0,2	55
Mostar	0,3	-0,7	2,2	0,5	67
Neum	0,9	-0,1	1,9	0,9	80
Sarajevo	0,2	-0,6	1,0	0,2	52
Sanski Most	0,1	1,3	2,6	1,3	79
Stolac	0,2	-0,1	1,4	0,5	70
Tuzla	0,8	0,1	2,1	0,9	66
Zenica	0,6	0,3	1,9	0,9	69

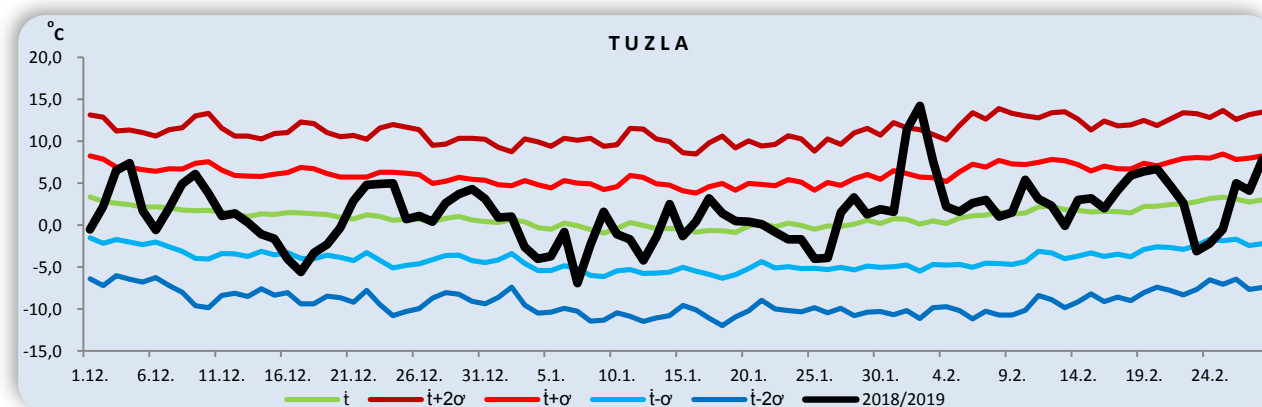
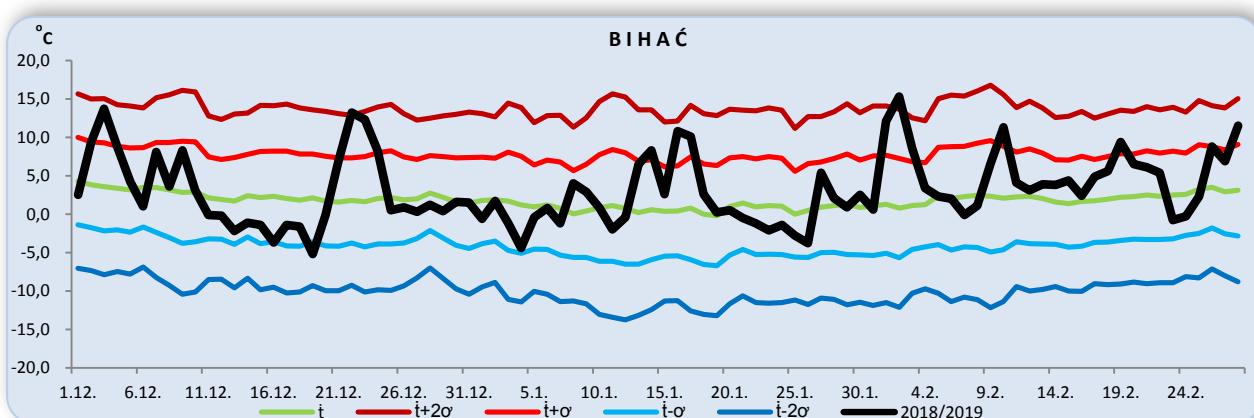
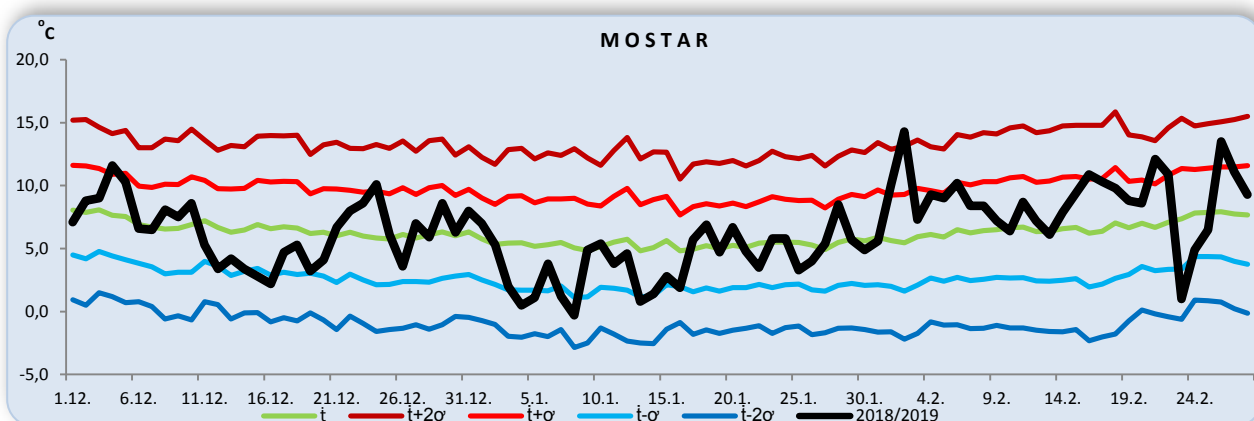
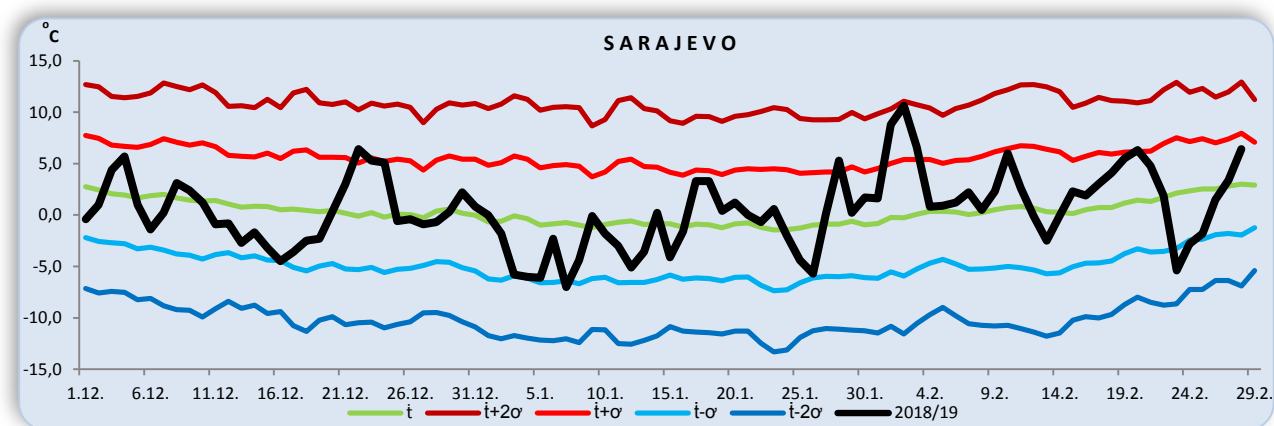
Table 1 Deviation middle of winter air temperatures in relation to cli standard normal and the corresponding percentiles

STATION	MOUNTH			STANICA	MOUNTH		
	December	January	February		December	January	February
Bihać				Livno			
Bjelašnica				Mostar			
Bugojno				Neum			
Drvar				Sarajevo			
Gradačac				Sanski Most			
Ivan Sedlo				Stolac			
Jajce				Tuzla			
				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 1-4 Mean daily air temperatures during winter 2018-2019. Year

Analysis of the monthly amount of precipitation expressed in % of average values shows that during the winter 2018 - 2019, deviations from normal precipitation amounts ranged from 73,5 % in Mostar, to 140,8 % on Bjelašnica. By percentage amounts of precipitation are classified into categories of normal.

The measured amounts of precipitation were in the range of 154,8 mm in Gradacac to 400,3 mm on Ivan-sedlo.

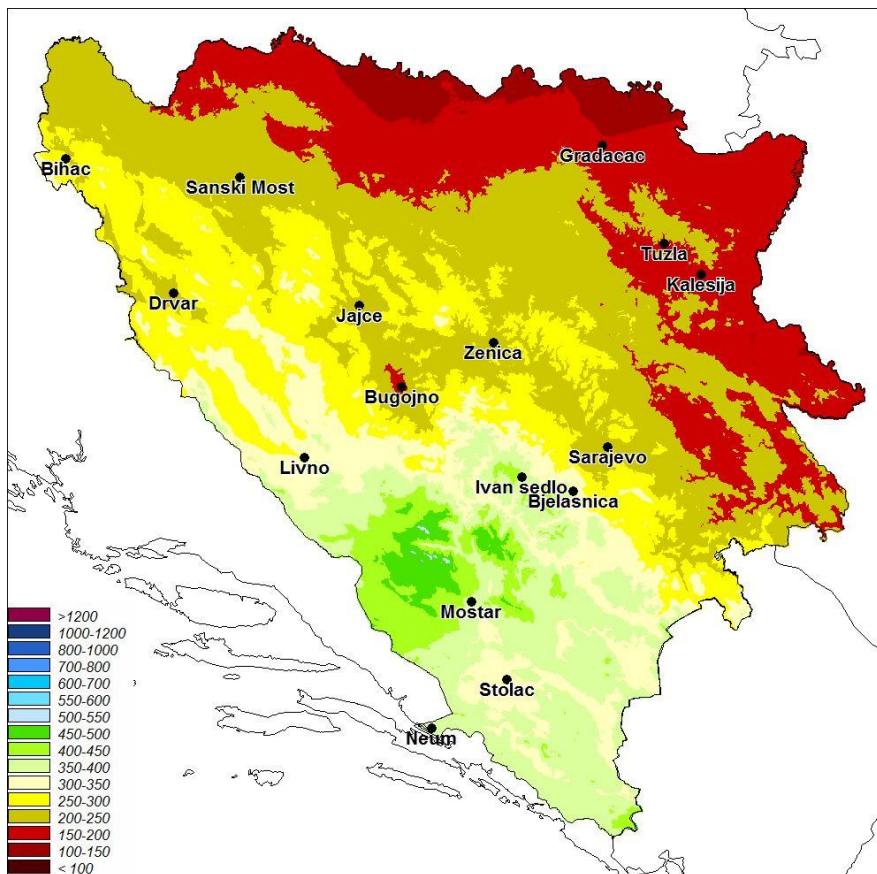
STATION	DEVIATION (%)				PERCENTILES
	DECEMBER	JANUARY	FEBRUARY	WINTER ¹	
Bihać	76,3	134,4	55,6	87,0	30
Bjelašnica	114,3	213,2	99,7	140,8	76
Bugojno	93,7	132,5	89,3	103,0	55
Drvar	88,4	//g	31,6	84,8	34
Gradačac	99,1	110,0	41,7	83,5	28
Ivan Sedlo	80,1	159,7	93,6	100,4	49
Jajce	112,7	103,6	82,8	100,9	50
Livno	80,6	164,8	53,1	98,1	52
Mostar	64,7	82,0	74,7	73,5	23
Neum	43,0	166,3	76,1	87,7	38
Sarajevo	99,0	111,5	84,6	98,7	52
Sanski Most	108,4	133,6	46,4	98,4	53
Tuzla	117,5	115,5	86,2	107,6	54
Zenica	127,7	118,1	165,8	135,6	88

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

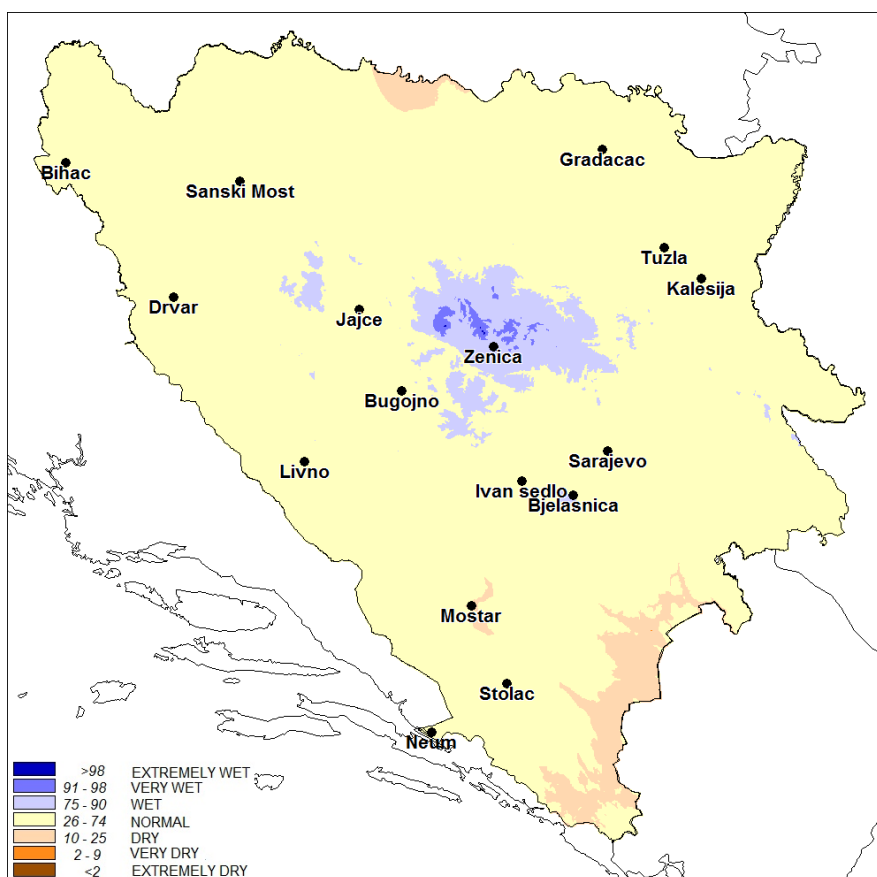
STATION	MOUNTH			STATION	MOUNTH		
	December	January	February		December	January	February
Bihać				Livno			
Bjelašnica				Mostar			
Bugojno				Sarajevo			
Drvar				Sanski Most			
Gradačac				Stolac			
Ivan Sedlo				Tuzla			
Jajce				Zenica			

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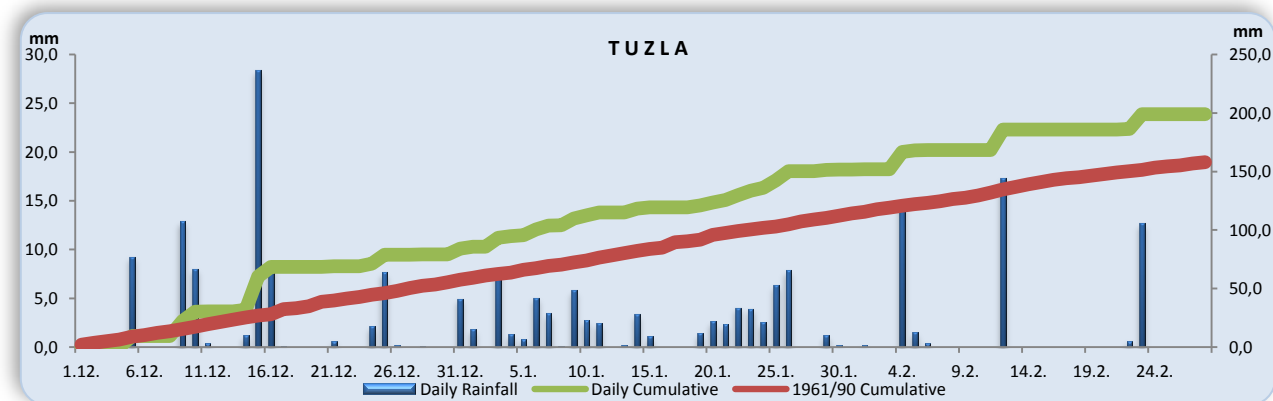
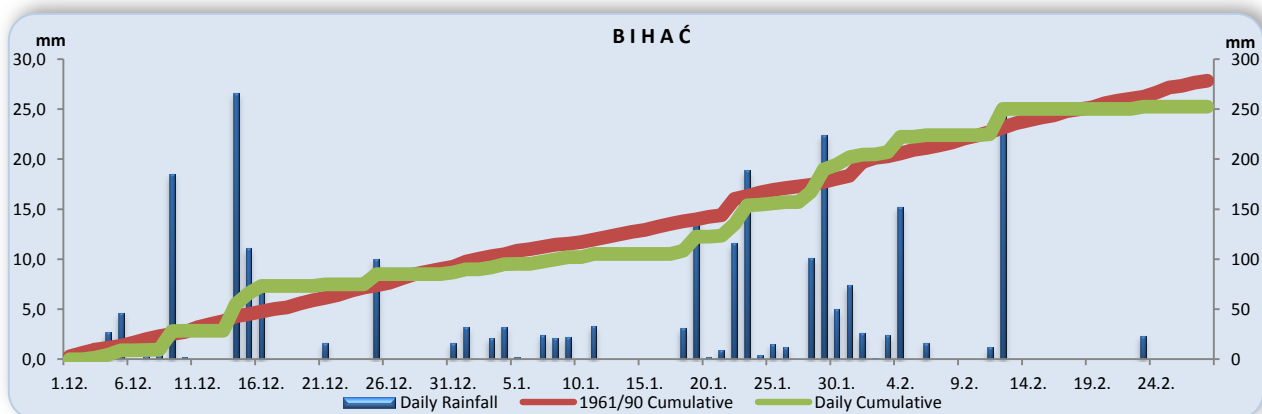
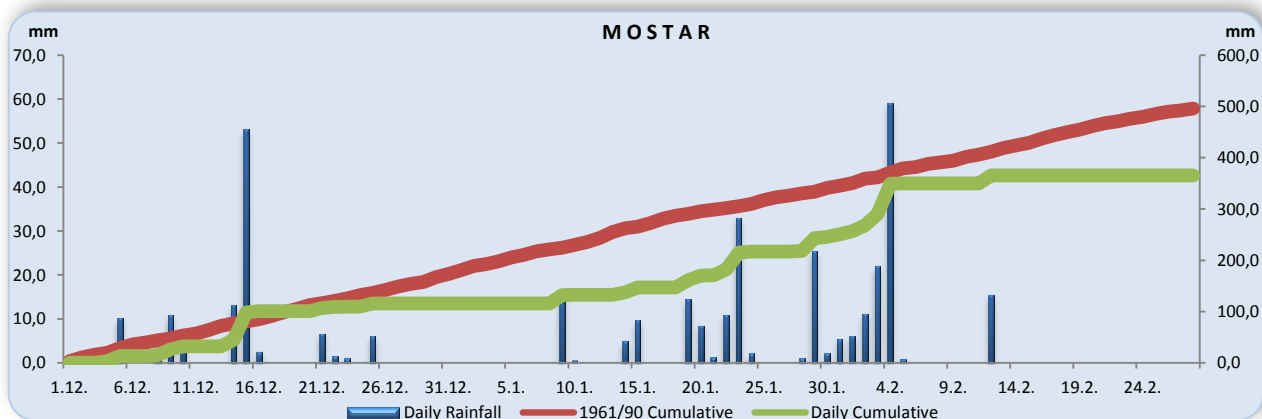
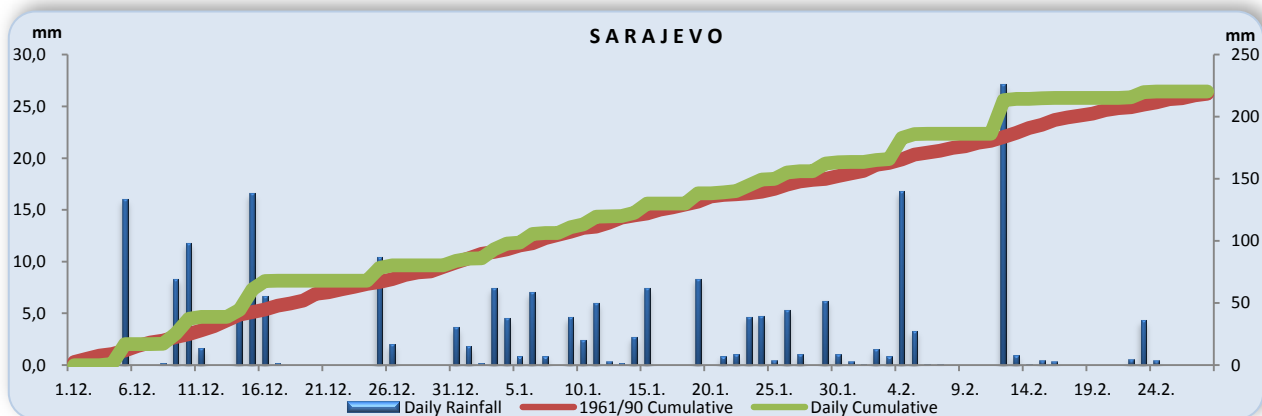
Table 6 Overview of marks on precipitation by month basis percentile



Map 3 Amount precipitation – winter 2018/2019, year (mm)



Map 4 Precipitation sums using percentile method during winter 2018/2019 compared to the base period (1961 – 1990)



Graph 5-8 daily and cumulative rainfall in the winter of 2018-2019 year.

Season		Air Temperature (°C)					Precipitation sums (mm)			
Station	Rank *	33	50	66	Observed value	Rank **	33	50	66	Observed Value
Sarajevo	17	1,4	0,9	0,2	0,5	10	237	201	182	220
Mostar	13	6,8	6,2	5,8	6,5	18	585	398	335	365
Bihać	9	2,9	2,0	1,4	3,2	23	368	290	268	252
Tuzla	10	1,9	1,1	0,6	1,6	9	193	171	156	199
Zenica	12	1,6	0,8	0,6	0,5	6	196	159	147	226
Bugojno	14	0,8	0,3	-0,3	0,5	11	205	162	149	192
Gradačac	8	2,8	1,9	1,1	3,4	17	200	169	142	155
Livno	16	1,4	0,5	0,3	0,5	14	354	283	240	309
San Most	7	2,0	1,3	0,8	2,0	16	268	217	185	210
Bjelašnica	26	-5,4	-6,1	-6,5	-7,3	9	344	253	241	344

*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 - 20 climate outlook for temperature	Observed	SEECOF - 20 climate outlook for precipitation	
Bosnia and Herzegovina (FBiH)	Above normal and normal in almost entire Bosnia and Herzegovina (except below normal mountainous areas)	No predictive signal (33,34,33) North and Central and Above normal (20, 35, 45) South Bosnia and Herzegovina)	Below normal and normal in almost Bosnia and Herzegovina, (except above central Bosnia)	No predictive signal (33,34,33) North and Central and Above normal (20, 35, 45) South Bosnia and Herzegovina)	- December >20 cold days Central and north Bosnia - January 1-15 day snowing and > 25 cold days Central B&H - February South B&H –wind > 100 km/h

¹ The actual amount of precipitation compared to the average sum

Photo: Mon Vranica (February 2019.)

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Analisis prepared: Dženan Zulum