National Climate Bulletin and the assessment of the SEECOF-23 Climate outlook for Montenegro for the summer season 2020

(prepared by Slavica Micev)

Assessment has been done in respect to 2 different periods, i.e. 1961-1990 using percentiles and 1981-2010 using tercile.

Characteristic of the summer season: temperature was higher than average and in categories warm, very warm and extremely warm. Precipitation was in categories dry and very dry, normal, wet and very wet (figure 1).

The average temperature was in the range from 14.8 ^{0}C in Zabljak to 26.5 ^{0}C in Podgorica. Deviation from the mean temperature was in range from 0.9 ^{0}C in Ulcinj to 2.9 ^{0}C in Rozaje. In the capital town Podgorica average temperature was for 1.6 ^{0}C higher than climatological normal 1961-1990.

The number of tropical days was in the range from the 7 days in Kolasin to the 68 days in Podgorica. The largest number of tropical nights was along the coast including Podgorica (28 nights in Ulcinj, 39 nights in Herceg Novi, 53 in Budva and 57 nights in Bar and Podgorica). It was also recorded in central region from the 1 tropical night in Cetinje and the 2 in Niksic.

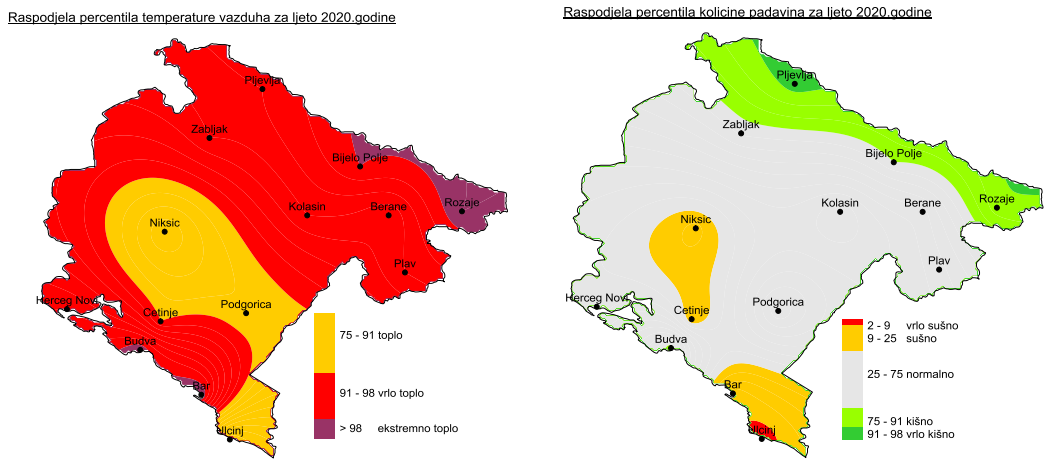


Figure 1. *Distribution of percentiles: for the temperature (left) and precipitation (right). Colors: yellow – warm, red – very warm, violet – extremely war; grey – normal, yellow – dry, green – wet, dark green – very wet*

The total amount of precipitation was in the range from the 23 mm in Ulcinj to the 365 mm in Rozaje. The total amount of precipitation in the capital town Podgorica was 190 mm. Comparing to climatological normal 1961-1990, the range of precipitation amount was from the 19% in Ulcinj to the 156% in Pljevlja.

Therefore, the southern part was drier than climatological normal 1961-1990, while the NW – NE belt of northern mountainous region was wetter.

Analysis in respect to the reference period 1981-2010 based on terciles

Table 1. Terciles of temperature and precipitation in respect to 1981-2010

Season		Air Temperature (°C)					Precipitation sums (mm)			
Station	Rank*	33	50	66	Observed value	Rank*	33	50	66	Observed Value
Podgorica	22	25.5	25.9	26.4	26.5	46	101.8	129.3	186.3	190
Bar	11	22.9	23.3	24.1	24.9	8	95.6	124.9	161.7	51
Niksic	23	20.0	20.3	20.8	20.7	24	159.5	192.0	225.8	158
Zabljak	17	13.8	14.3	14.7	14.8	49	194.5	218.5	235.7	322
Bijelo Polje	15	18.7	19.1	19.4	20.3	57	141.4	192.2	213.9	255

*Rank: (warmest season and lowest seasonal precipitation for the period 1949-2020)

Assessment of the SEECOF-23 Climate outlook for 2020 summer season

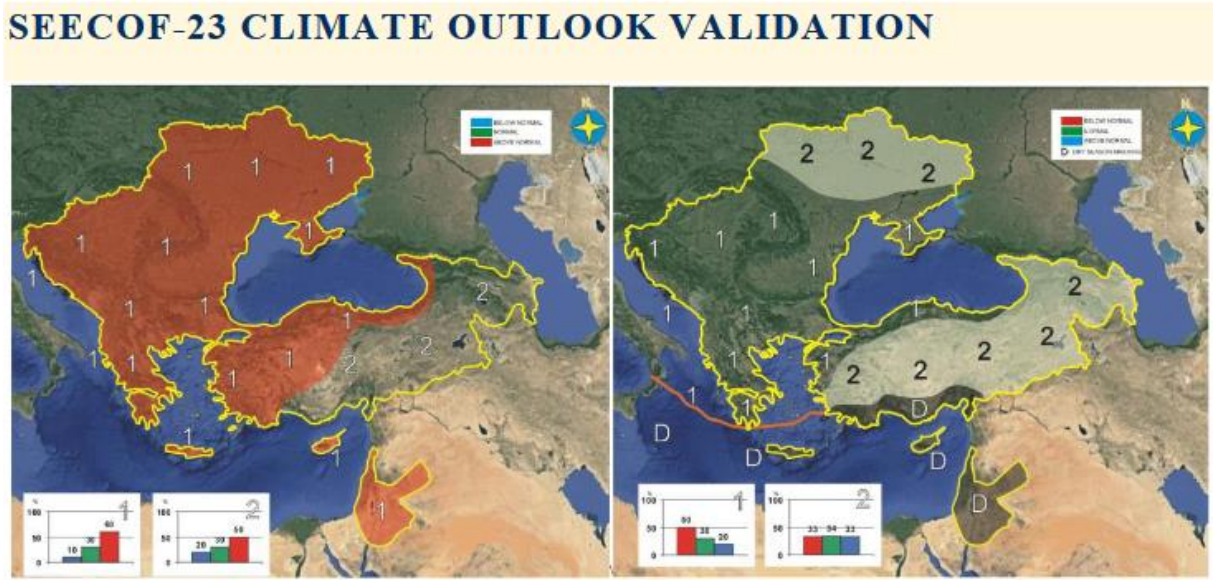
(prepared by Mirjana Ivanov)

Climate outlook statement for the summer 2020 shows matching with measured temperature in Montenegro. Distinctions exist for the precipitation, as most of the country had normal amount of it.

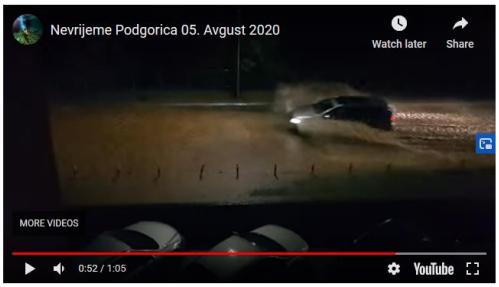
Majority of the reagions in Montenegro experienced above-average summer season temperature (over 91st percentile) in respect to the 1961-1990 basic period, or over 66th tercile in respect to the 1981-2010 basic period.

Seasonal precipitation was near normal in larger part of Montenegro, below in some central and southern areas and above in NW-NE belt of northern mountainous region (figure 1).

During August, the new record in precipitation of 175.6mm was measured in Pljevlja, while previous highest amount was 171.5 mm recorded in 1995. The 2nd higest amount of precipitation of 164.8 mm was recorded in Rozaje, what is almost the same like the highest amount 164.9 mm measured in August 2013.



Climate outlook: the summer temperature (left) and precipitation (right) in 2020

Country	Seasonal temperature		Seasonal precipitation		High Impact Events*
	Observed	SEECOF-17 climate outlook for temperature	Observed	SEECOF-17 climate outlook for precipitation	
Montenegro	Above normal	Above normal (10,30,60)	Below normal (dry in the central and southern area) Normal in most of the country Above normal (NW-NE belt of northern mountainous region)	Below normal (50,30,20)	Pljevlja: new record 175.6 mm in August 2020; 05.08.2020- Storm wind and heavy precipitation in Podgorica and along the coast caused damages on the trees, streets were flooded and traffic functioned with dificulties 

					 https://www.kurir.rs/region/crna-gora/3509363/jako-nevreme-pogodilo-deo-crne-gore-u-podgorici-poplavljene-ulice-olujni-vetar-lomio-stabla-video.

Optional → * Events that had an impact on the society (events that caused great material damage to the society during previous season – on the basis of the assessment of the hydrometeorological service):

1) Record breaking maximum or minimum air temperatures, precipiation during season or for specific months (date and place of the event)
2) Heavy precipitation at the stations that caused flood with damage
3) In case of extreme season indicate the ranking, warmest or coldest (wettest or driest) (mandatory)
4) Heat waves or cold spells (with the specified criteria for heat/cold spell)
5) Anomalies of the number of days: frost, ice, days with severe frost, with snow cover, summer, tropical, tropical nights (depending on the season)
6) The occurrence of stormy wind gusts that caused damage to that area (date and place)
7) The occurrence of hail (date and place) that caused major damage
8) The occurrence of snow cover caused major damage
9) Snow cover in combination with wind gusts caused major damage
10) Drought (precipitation deficit) that caused fires or damage to agriculture and water supply
11) Other extreme events (tornado, spout)