

National Climate Bulletin and the assessment of the SEECOF-20 Climate outlook for Montenegro for the summer season

(prepared by Slavica Micev)

Assessment were done for 2 different periods – spatial distribution by percentiles for 1961-1990 period, while chart below for the 1981-2010 by terciles' assessments.

According to the percentile distribution the air temperature during the summer was in category from very warme (western and southest parts) to extremely warm in the rest of the country, figure 1.

Precipitation was in category normal in the most of the country, wet in the northern and eastward mountainous region and very wet in eastern parts of Montenegro, figure 1. In category dry was belt from the central to coastal area of Montenegro, figure 1.

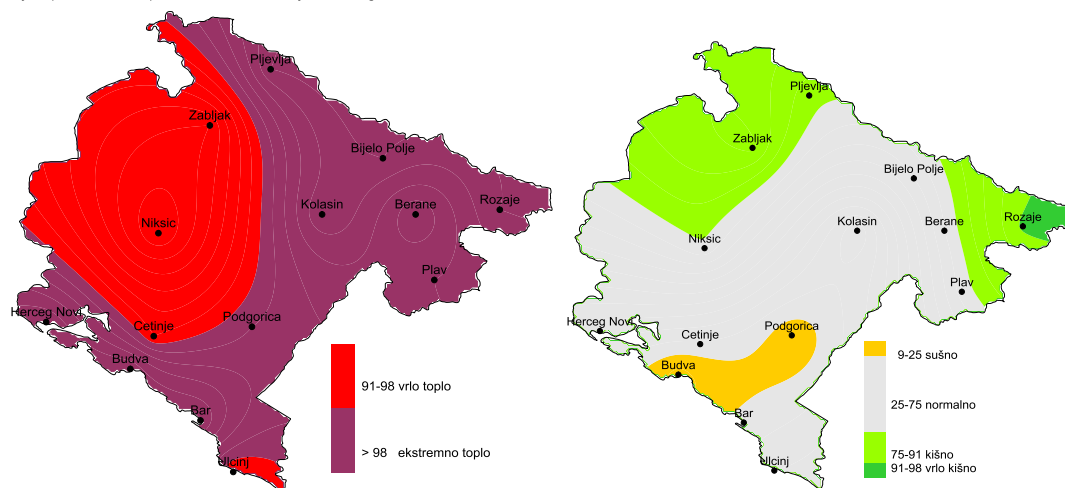


Figure 1. Percentile distribution of air temperature (left) and precipitation (right). Red color – very warm, violet – extremely warm. Grey – normal, yellow – dry, green – wet, dark green – very wet

Average air temperature was in the range from 14.8⁰C in Zabljak to 27.3⁰C in Podgorica. All anomalies with respect to climatological mean 1961-1990 were positive and in the range from 1.7⁰C in Niksic (central part) to 4⁰C in Bar (coastal area). In Podgorica capital town the anomaly was +2.4⁰C relative to the 1961-1990.

Number of tropical days (Tx ≥ 30⁰C) was from the 6 days in Rozaje to 79 days in Podgorica. No tropical days were registered in Zabljak (mountainous region, 1450 mm).

Number of tropical nights (Tn ≥ 20⁰C) was in range from 1 day in Cetinje to 71 days in Podgorica and Budva.

The total amount of precipitation was in the range from 80 mm in Budva to 423 mm in Rozaje (figure 1). In the capital town Podgorica the total amount was 96 mm or 60% of the average summer precipitation. The total amount of precipitation in Rozaje was 172% relative to 1961-1990 period what was the 2nd year with the highest precipitation after 1976 when it was 431.7 mm.

- Chart for the assessment of the season (identical charts for months - optional)

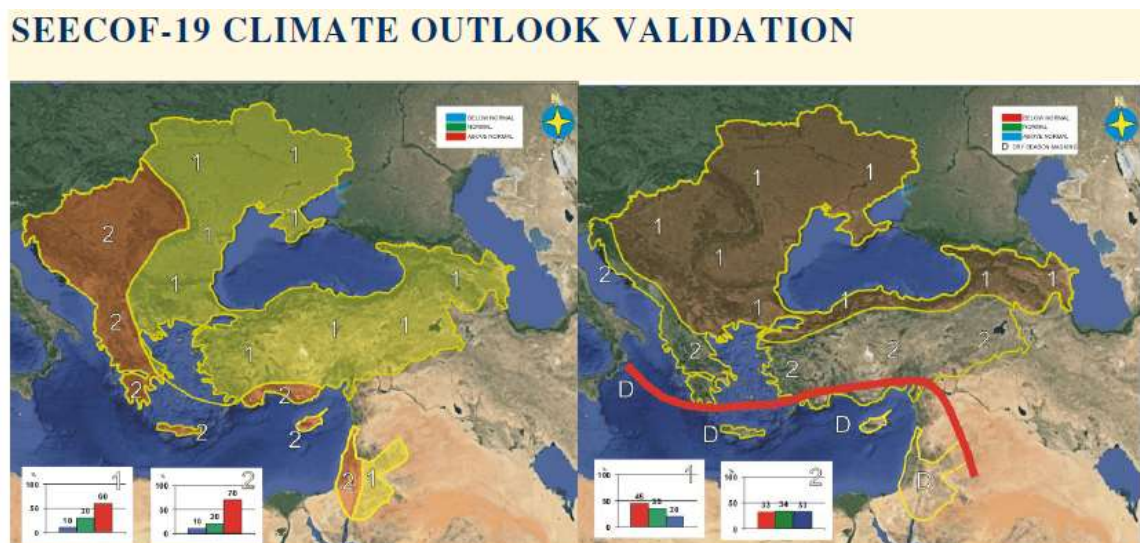
Season		Air Temperature (°C)				Precipitation sums (mm)				
Station	Rank *	33	50	66	Observed value	Rank *	33	50	66	Observed Value
Podgorica	9	25.5	25.9	26.4	27.3	24	100.9	129.3	186.7	105
Bar	2	22.9	23.3	24.1	26.3	29	96.8	124.9	164.2	104
Niksic	15	20	20.3	20.9	21.1	61	159.5	192	228.3	315
Zabljak	25	13.8	14.3	14.7	14.8	57	194.4	218.5	234	408
Bijelo Polje	12	18.7	19.1	19.4	20.9	47	140.4	193.1	222.8	234

*Rank: (warmest season and highest seasonal precipitation from 1949-2017)


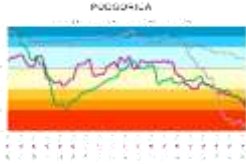
Assessment of the SEECOF-17 Climate outlook for 2018 summer season

(prepared by Mirjana Ivanov)

- Chart for the previous season



Climate outlook the summer temperature (left) and precipitation (right) in 2018

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 (very warm in NW parts to extremely warm from N-NE to coastal region)	Above normal (10,20,70)	Below normal (dry in the belt from the central to coastal area) Normal normal in the most of the country Above (wet in the N and E mountainous region)	No predictive signal (33,34,33)	<p>1. HEAVY PRECIPITATION followed by wind and hail 13.06.2018: <u>Rozaje</u>: a lot of water on the streets – difficulties with the trafic; <u>Niksic</u>: - around 105 mm or rainfall with hail in approximately one hour affected: agriculture, streets were flooded, traffic was difficult in the city and its surroundings, problems with energy supply, basements under the water, rooves were damaged.</p>  <p>Source: Svetlana Mandić, daily newspaper „Vijesti“ http://www.vijesti.me/vijesti/pogledajte-u-niksicu-grad-padao-gotovo-sat-nevrijeme-unistilo-baste-ulice-pop-992563</p> <p>2. Slow onset of hydrological DROUGHT: -from central to southern parts of the country (Podgorica, Bar, Ulcinj) consecutive decrease of water level in the rivers (e.g.SPI monitoring for Podgorica, figure below)</p>  <p>http://www.meteo.co.me/misc.php?text=135&sektor=1</p>

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, precipitation 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)