

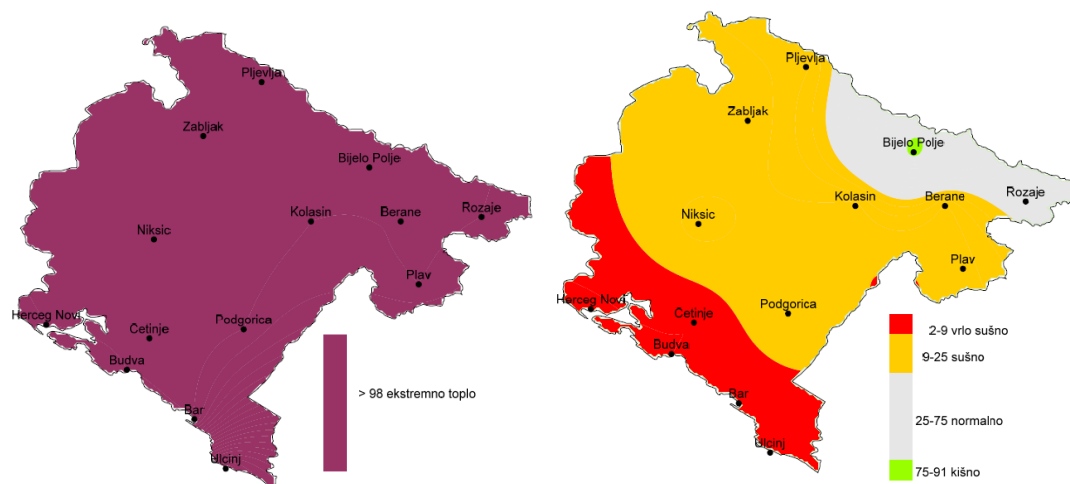
# National Climate Bulletin and the assessment of the SEECOF-17 Climate outlook for Montenegro for the summer season

(prepared by Slavica Micev)

- On the basis of the agreement made on SEECOF – 10, the suggested climatological reference period is 1981-2010. Indicate if some other base period was used.

*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.*

- Submit the assessment of the season and spatial distribution of tercile air temperature and precipitation sums for the season - mandatory, per month – optional



**Figure 1.** Percentile distribution of air temperature (left) and precipitation (right)

*According to the percentile distribution air temperature in the summer was in category extremely warm in whole country, figure 1.*

*Precipitation was in category normal towards northeast of the country and wet in Bijelo Polje and its surroundings, figure 1. Larger part of Montenegro was affected by drought (dry to very dry conditions, figure 1) which started in december 2016.*

*Average air temperature was in the range from 16.5 °C in Zabljak to 28.5 °C in Podgorica. All anomalies from climatological mean were positive and in the range from 2.1 °C in Ulcinj to 4.2 °C in Rozaje, table 1.*

*The summer 2017 was second warmest in Bar, Pljevlja, Kolasin, Zabljak, Cetinje, Bijelo Polje and Rozaje, while in the fifth warmest in the rest of the country, table 1.*

*Number of tropical days ( $T_x \geq 30$  °C) was from 7 days in Zabljak to 84 in Podgorica. It is important to note that the number of tropical days in Zabljak (northern mountainous region*

on 1450 masl) are the highest/largest on the record (since the measurements started in Zabljak in 1958) and that were observed in August, 2017.

Number of tropical nights ( $T_n \geq 20^\circ\text{C}$ ) was in range from 2 days in Niksic and Cetinje to 65 days in Podgorica capital town.

The total amount of precipitation was in the range from 4 mm in Herceg Novi to 268 mm in Bijelo Polje. In the capital town Podgorica the total amount was 78 mm or 48% of the summer precipitation.

The deficit in precipitation started already in December 2016, and prolonged during and after the summer. During the summer SPI 6 oscilated in the range from moderate to normal drought. Since February 2017 deficit in precipitation was accompanied by the temperature above normal mean.

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

Season	Rank*	Air Temperature ( $^\circ\text{C}$ )				Observed value	Rank*	Precipitation sums (mm)			
		33	50	66	Observed value			33	50	66	Observed Value
Podgorica	4	25.5	25.9	26.4	28.5	13	100.9	129.3	186.7	78	
Bar	2	22.9	23.3	24.1	26.0	3	96.8	124.9	164.2	22	
Niksic	3	20	20.3	20.9	22.5	15	159.5	192	228.3	134	
Zabljak	2	13.8	14.3	14.7	16.5	8	194.4	218.5	234	164	
Bijelo Polje	3	18.7	19.1	19.4	21.6	55	140.4	193.1	222.8	268	

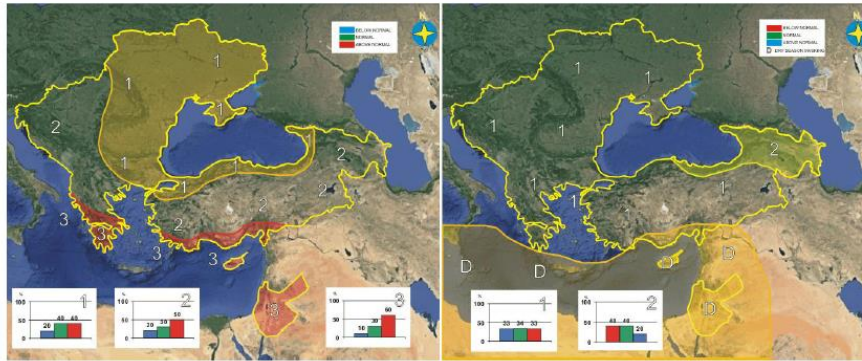
\*Rank: (warmest season and lowest seasonal precipitation from 1949-2017)

## Assessment of the SEECOF-17 Climate outlook for 2017 summer season

(prepared by Mirjana Ivanov)

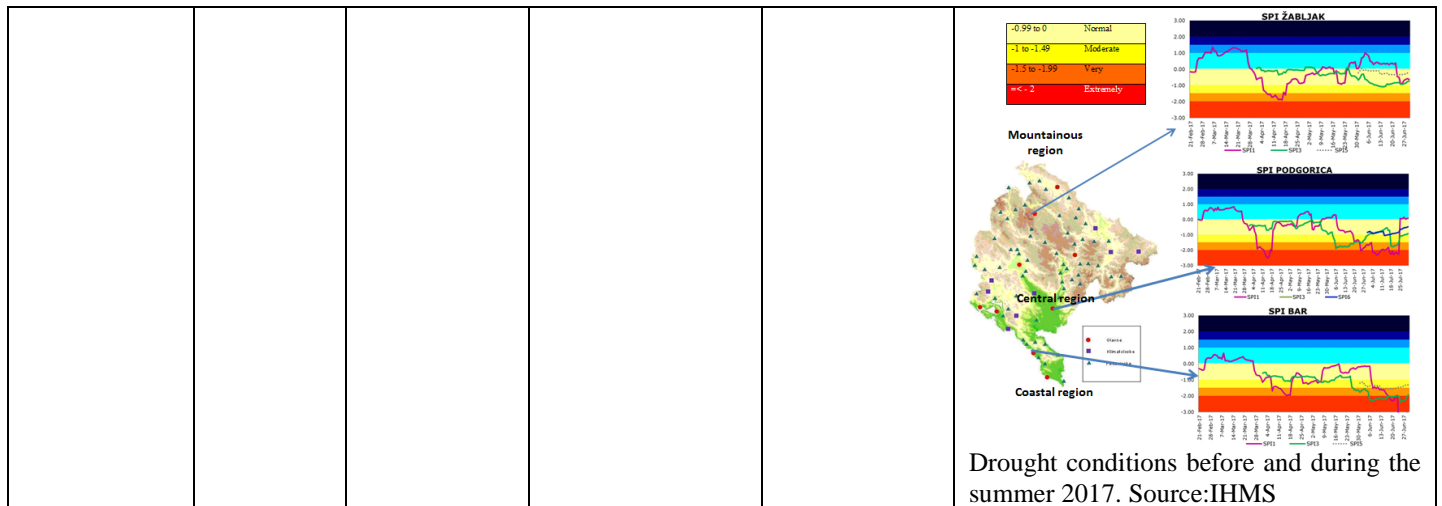
- Chart for the previous season

### SEECOF-17 CLIMATE OUTLOOK VALIDATION



Climate outlook for temperature (left) and precipitation (right)

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 (20,30,50)	Below normal (larger part)  Normal (northeastward)  Above (in Bijelo Polje and its surroundings)	No predictive signal (33,34,33)	Shift in low water level 2 months earlier (in August instead in October); Favorable conditions for forest fires; Shift in grape harvest 1 month earlier (in September instead in October); Accumulating lakes near minimum; Honey less than normal, and some agricultural products especially tomatoes, cabbage, cauliflower, broccoli and radish. Their losses are between 30-40%. Preferable conditions for olives.



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)