

VERIFICATION OF THE SEECOF -25 SUMMER 2021 CLIMATE OUTLOOK FOR REPUBLIC OF NORTH MACEDONIA COMPARED TO THE 1981-2010 BASE PERIOD

Hydrometeorological Service of Republic of North Macedonia prepares regular seasonal climate analysis, based on the products of SEECOF seasonal forecasts and the forecast products from the SEVCCC. The present analysis is for the summer season 2021 (June, July and August), and it is based on the means of the climatological period 1981-2010.

➤ SUMMER 2021

The mean seasonal air temperature during summer 2021 ranged between 16.6°C in Lazaropole to 27.6°C in Gevgelija. Spatial distribution of the mean seasonal air temperature is shown on Figure 1. The mean air temperatures anomaly was from 0.6°C in Lazaropole to 2.3°C in Gevgelija.

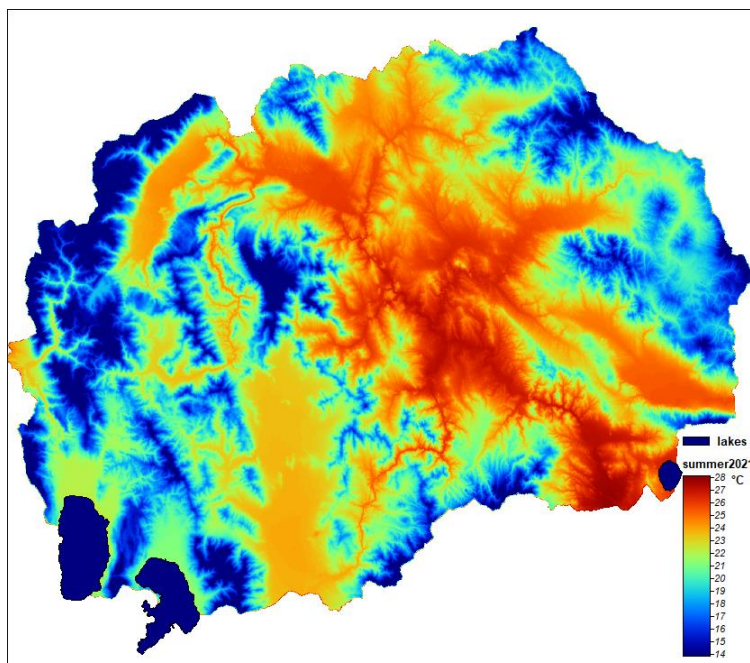


Figure 1: Spatial distribution of the mean seasonal air temperature (°C) during summer 2021

The mean maximum seasonal air temperature anomaly was from 1.4°C in Lazaropole to 3.3°C in Gevgelija. The mean minimum seasonal air temperature was above normal, with anomaly from -0.2°C in Lazaropole to 1.7°C in Skopje. The highest daily air temperature during summer 2021 was measured 44.1°C observed on 2nd of August in Gevgelija. The lowest air temperature during summer 2021 was -1.1°C observed on 1st of June in Lazaropole.

According to percentile calculation method, the summer season 2021 was classified as warm to extremely warm (Table1).

Rainfall totals were variable for this summer season. Spatial distribution of the precipitation sums is shown on Figure 2 and the anomaly compared to 1981-2010 base period on Figure 3.

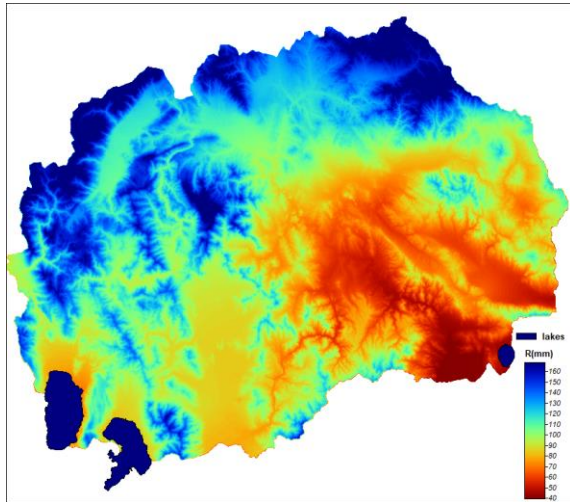


Figure 2: Spatial distribution of the precipitation sums (mm) for summer 2021

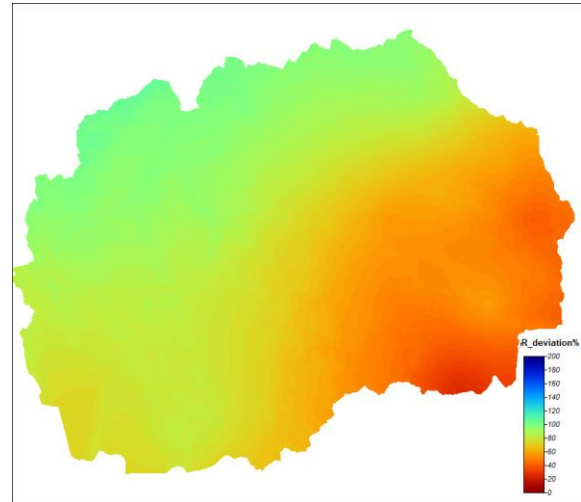


Figure 3: Spatial distribution of the precipitation sums anomaly (%) for summer 2021

The wettest day was 11th of July with 24.8mm measured in Lazaropole.

According to percentile calculation method, this summer precipitation regime was classified as dry to very dry in the southeast of the country (Table1).

Meteorological station	Temperature	Precipitation
Berovo	very warm	very dry
Kriva Palanka	very warm	dry
Stip	very warm	dry
Strumica	very warm	dry
Demir Kapija	extremely warm	dry
Gevgelija	extremely warm	very dry
Skopje	extremely warm	dry
Prilep	very warm	dry
Bitola	extremely warm	dry
Ohrid	very warm	dry
Lazaropole	warm	dry
Mavrovo	very warm	dry

Table1: Air temperature and precipitation classification in Republic of North Macedonia for summer 2021 using percentile method compared to 1981-2010 base period

The values of distribution of tercile for the air temperature and the precipitation sums are shown in table 2 and 3, respectively.

Air Temperature (°C)	summer	1981-2010	
	2021	33	67
Berovo	19.7	17.8	18.6
Kriva Palanka	21.0	19.3	20.0
Stip	25.1	23.0	24.0
Strumica	25.0	23.0	23.8
Demir Kapija	26.6	24.1	24.9
Gevgelija	27.6	25.0	26.0
Skopje	25.4	23.0	23.8
Prilep	23.1	21.3	22.1
Bitola	23.8	21.4	22.0
Ohrid	22.1	20.4	21.0
Lazaropole	16.6	15.7	16.2
Mavrovo	18.1	15.9	16.7

Table 2: Values of distribution of tercile for air temperature for period 1981-2010

Precipitation sums (mm)	summer	1981-2010	
	2021	33	67
Berovo	65.4	138.8	176.9
Kriva Palanka	156.7	132.4	207.3
Stip	64.4	87.6	131.9
Strumica	67.3	85.1	132.6
Demir Kapija	44.6	75.0	98.0
Gevgelija	29.2	61.9	136.0
Skopje	111.3	86.8	136.7
Prilep	85.3	75.3	135.8
Bitola	86.8	77.6	126.4
Ohrid	70.2	65.6	112.6
Lazaropole	137.8	118.5	190.4
Mavrovo	135.6	103.2	168.4

Table 3: Values of distribution of tercile for precipitation for period 1981-2010

The SEECOF-25 forecast product for the mean temperatures for summer season puts Republic of North Macedonia in a zone 1, which is likely to experience above average summer temperatures (Figure 5). Forecast for the precipitation for JJA 2021 categorized our country in zone 2 and no predictive signal is available (Figure 6).

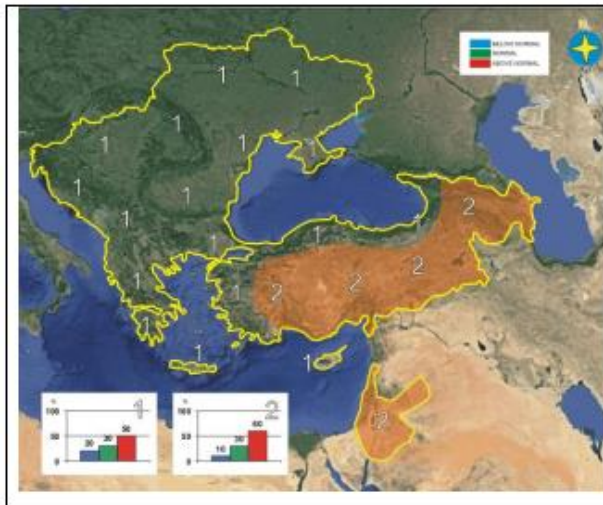


Figure 5: Graphical presentation of the 2021 summer temperature outlook



Figure 6: Graphical presentation of the 2021 summer precipitation outlook

A general judgment for the models evaluation for summer season is that the model was efficient concerning the temperature. Concerning the precipitation, evaluation of the model is difficult because of no predictive signal and the variable precipitation regime.

Find also below a table presenting the general anomalies of SEECOF products and extreme events of the recorded summer weather.

Country	Seasonal temperature (JJA)		Seasonal precipitation (JJA)		High Impact Events
	Observed	SEEVCCC climate outlook for temperature	Observed	SEEVCCC climate outlook for precipitation	
REPUBLIC OF NORTH MACEDONIA	Above average	Above average (20, 30, 50)	below normal - variable precipitation regime	No predictive signal (33, 34, 33)	<p>August</p> <ul style="list-style-type: none"> - Exceeded absolute maximum temperature 39.4°C on 2nd in Bitola 41.4°C on 2nd in Strumica 44.1°C on 2nd in Gevgelija