VERIFICATION OF THE SEECOF -27 SUMMER 2022 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 2022(June, July and August), and it is based on the means of the climatological period 1981-2010.

➢ SUMMER 2022

The mean seasonal air temperature during summer 2022 ranged between 16.3°C in Lazaropole to 26.6°C in Gevgelija. Spatial distribution of the mean seasonal air temperature is shown on Figure1. The mean air temperatures anomaly was from 0.3°C in Lazaropole to 1.3°C in Gevgelija.

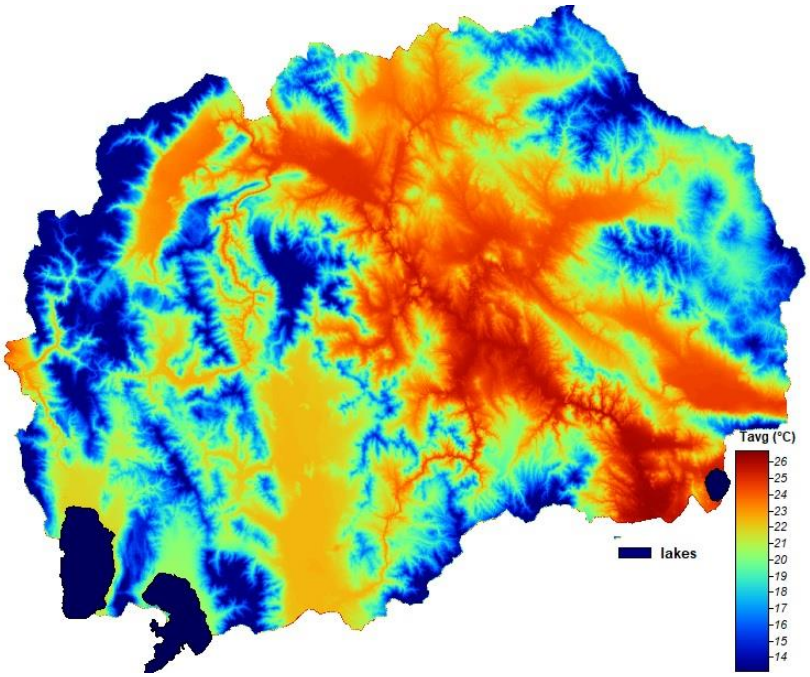

Figure 1: Spatial distribution of the mean seasonal air temperature (°C) during summer 2022

The mean maximum seasonal air temperature anomaly was above from 0.1°C in Prilep to 1.7°C in Mavrovo. The mean minimum seasonal air temperature anomaly was from -0.1°C in Lazaropole to 1.6°C in Skopje and Gevgelija. The highest daily air temperature during summer 2022 was measured 41.6°C observed on 24th of July in Gevgelija. The lowest air temperature during summer 2021 was 3.8°C observed on 12th of July in Lazaropole.

According to percentile calculation method, the summer season 2022 was classified as warm to very 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.

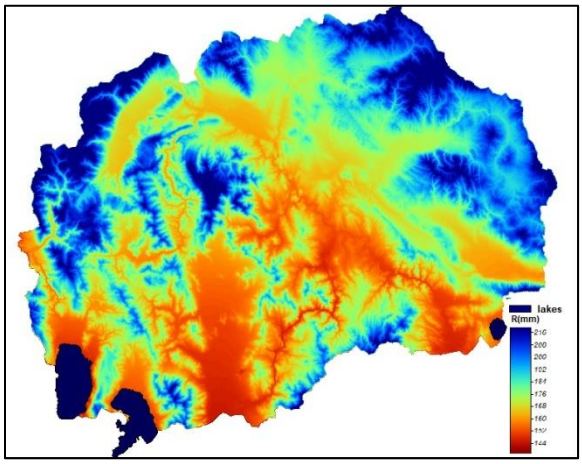

Figure 2: Spatial distribution of the precipitation sums (mm) for summer 2022

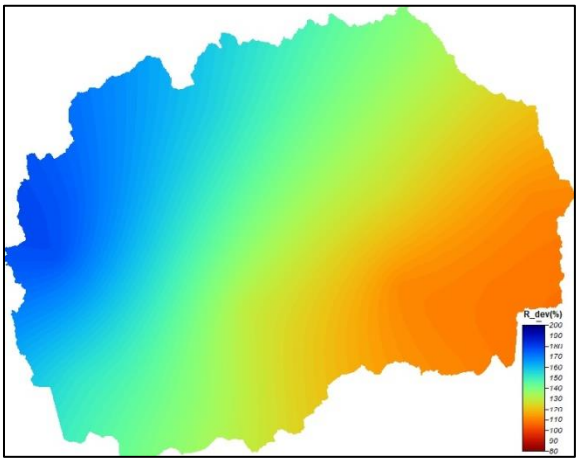

Figure 3: Spatial distribution of the precipitation sums anomaly (%) for summer 2022

The wettest day was 11th of June with 90.3mm measured in Mavrovo.

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

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

Table1: Air temperature and precipitation classification in Republic of North Macedonia for summer 2022 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 2022	1981-2010 33	1981-2010 67
Berovo	18.7	17.8	18.6
Kriva Palanka	20.0	19.3	20.0
Stip	24.0	23.0	24.0
Strumica	24.1	23.0	23.8
Demir Kapija	25.2	24.1	24.9
Gevgelija	26.6	25.0	26.0
Skopje	24.5	23.0	23.8
Prilep	22.0	21.3	22.1
Bitola	22.2	21.4	22.0
Ohrid	21.5	20.4	21.0
Lazaropole	16.3	15.7	16.2
Mavrovo	17.3	15.9	16.7

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

Precipitation sums (mm)	summer 2022	1981-2010 33	1981-2010 67
Berovo	234.8	138.8	176.9
Kriva Palanka	205.4	132.4	207.3
Stip	111.4	87.6	131.9
Strumica	136.8	85.1	132.6
Demir Kapija	172.2	75.0	98.0
Gevgelija	116.0	61.9	136.0
Skopje	162.6	86.8	136.7
Prilep	224.2	75.3	135.8
Bitola	127.5	77.6	126.4
Ohrid	185.1	65.6	112.6
Lazaropole	115.8	118.5	190.4
Mavrovo	225.7	103.2	168.4

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

The SEECOF-27 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 (10; 20; 70). Forecast for the precipitation for JJA 2022 categorized our country in zone 2 and no predictive signal with precipitation around normal (50; 30; 20).

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 the variable precipitation regime. Nevertheless, the convective mountainous episodes were given as a warning.

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 (10, 20, 70)	Normal to very wet on west mountainous part	Normal (50, 30, 20)	**June** - Exceeded maximum daily precipitation amount 90.3mm on 11th in Mavrovo