

## VERIFICATION OF THE SEECOF -26 WINTER 2021/2022

### 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 from the SEEVCCC. The present analysis was for the winter 2021/2022, December 2021, January and February 2022, and it is based on the means of the climatological period 1981-2010.

#### ➤ WINTER 2021/2022

Overall conditions in Republic of N. Macedonia this winter season had positive divergence from the long term average 1981-2010. During winter 2021/2022, the mean air temperature ranged between  $-1.9^{\circ}\text{C}$  in Lazaropole and  $6.4^{\circ}\text{C}$  in Gevgelija. Spatial distribution of the mean seasonal air temperature is shown on Figure 1. The mean air temperatures anomaly ranged from  $-0.8^{\circ}\text{C}$  in Lazaropole to  $1.4^{\circ}\text{C}$  in Gevgelija (Figure 2).

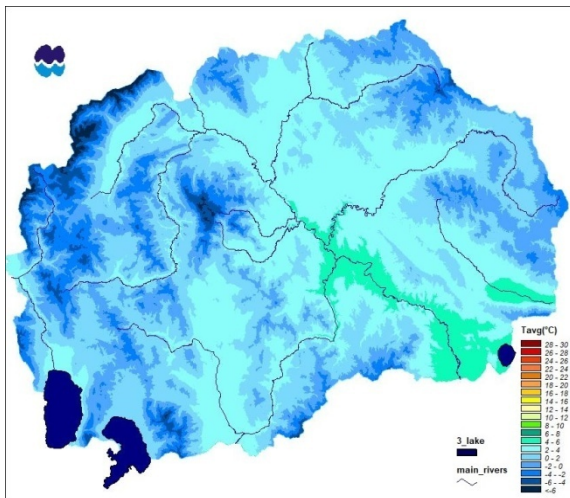


Figure 1: Spatial distribution of the mean seasonal air temperature ( $^{\circ}\text{C}$ ) for winter 2021/2022

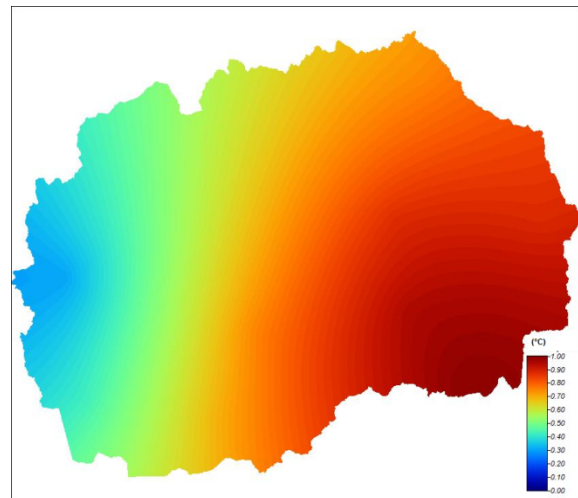


Figure 2: Mean seasonal air temperature anomaly ( $^{\circ}\text{C}$ ) compared to the period 1981-2010 for winter 2021/2022

The mean maximum seasonal air temperature anomaly was from  $-0.6$  in Lazaropole to  $2.5$  in Skopje. The mean minimum seasonal air temperature was from  $-1.1^{\circ}\text{C}$  in Lazaropole to  $1.2^{\circ}\text{C}$  in Gevgelija.

According to percentile calculation method, almost whole territory was classified as normal, reaching to very warm at the southeast part. (Table1).

The highest daily winter air temperature was measured 20.7°C observed on 1<sup>st</sup> January in Gevgelija, and the lowest winter air temperature was -19.6°C observed on 25<sup>th</sup> of January in Berovo.

Rainfall totals were variable for this winter season. Spatial distribution of the precipitation sums is shown on Figure 3 and the anomaly compared to 1981-2010 base period on Figure 4. The wettest day was 7<sup>th</sup> of December in Berovo with 42.8mm.

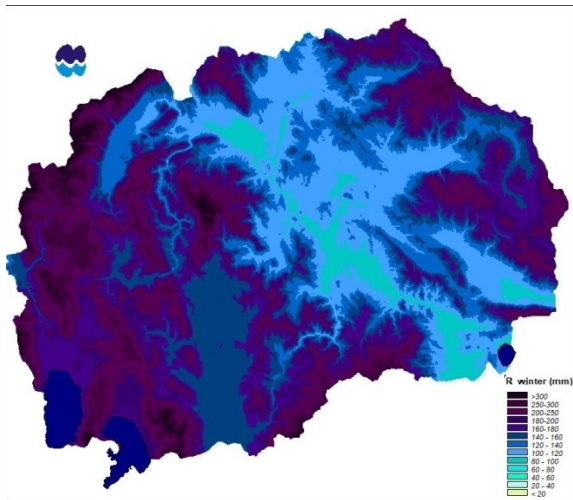


Figure 3: Spatial distribution of the precipitation sums (mm) during winter 2021/2022

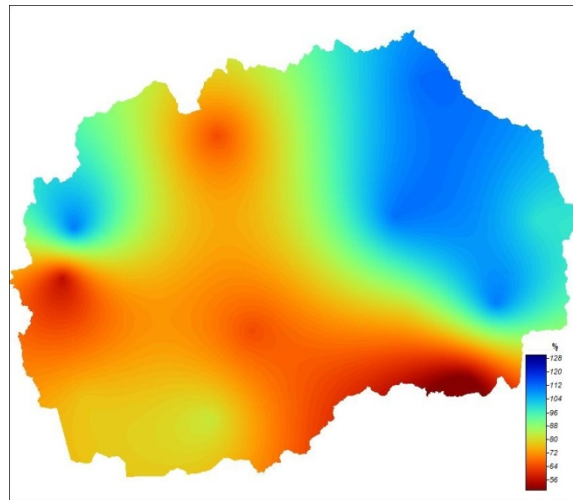


Figure 4: Spatial distribution of the precipitation sums anomaly (mm) during winter 2021/2022

According to percentile calculation method for precipitation, the territory of Republic of North Macedonia was classified as dry to normal (Table1).

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

Table1: Air temperature and precipitation classification in Republic of N. Macedonia for winter 2021/2022 using percentile method compared to 1981-2010 base period

## Hydrometeorological Service of Republic of North Macedonia

Meteorology Department

Climatological analysis for winter 2021/2022

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

Air Temperature (°C)	2021/2022	1981-2010	
		33	67
Berovo	0.3	-1.2	0.6
Kriva Palanka	1.5	0.4	1.4
Stip	3.6	1.8	3.2
Strumica	3.3	1.4	3.2
Demir Kapija	4.4	2.3	4.1
Gevgelija	6.4	4.5	5.6
Skopje	2.6	1.6	2.7
Prilep	2.4	0.5	2.3
Bitola	1.8	-0.5	2,0
Ohrid	2.8	2.1	3.1
Lazaropole	-1.9	-2.7	-0.5
Mavrovo	-1.0	-1.7	-0.7

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

Precipitation sums (mm)	2021/2022	1981-2010	
		33	67
Berovo	133.5	109.5	662.9
Kriva Palanka	139.4	106.9	665.4
Stip	100.1	71.3	500
Strumica	169.8	120.9	602.8
Demir Kapija	132.5	125.7	597.7
Gevgelija	88.9	111.8	776.0
Skopje	70.2	87.5	521.6
Prilep	69.4	80.5	531.7
Bitola	146.5	145.0	675.7
Ohrid	156.2	178.8	749.9
Lazaropole	179.9	246.7	1064.5
Mavrovo	343.4	269.0	1172.7

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

The SEECOF-26 forecast for the mean temperatures for winter season put Republic of N. Macedonia in zone to have more chances for warmer than normal conditions. Forecast for the precipitation for DJF 2021/2022 categorized our country in region where uncertainty is high: probabilities for below, near- or above-average conditions are approximately equal.

Find also below a table 4 presenting the general anomalies of SEECOF products and extreme events of the recorded winter weather.

Country	Seasonal temperature (DJF)		Seasonal precipitation (DJF)		High Impact Events
	Observed	SEECOF climate outlook for temperature	Observed	SEECOF climate outlook for precipitation	
<b>REPUBLIC OF N.MACEDONIA</b>	Normal - most of the territory  Above normal - in southeast part	Above normal (20, 30, 50)	Below normal	No signal (33, 34, 33)	Exceeded absolute maximum temperature  20.7°C on 1 <sup>st</sup> of January in Gevgelija