VERIFICATION OF THE SEECOF -24 WINTER 2020/2021 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 from the SEEVCCC. The present analysis is for the winter 2020/2021, December 2020, January and February 2021, and it is based on the means of the climatological period 1981-2010.

➢ WINTER 2020/2021

Overall conditions in Republic of N. Macedonia this winter season had positive divergence from the long term average 1981-2010. During winter 2020/2021, the mean air temperature ranged between 0°C in Lazaropole and 7.3°C in Gevgelija. Spatial distribution of the mean seasonal air temperature is shown on Figure 1. The mean air temperatures anomaly was above normal at all meteorological stations from 1.1°C in Lazaropole to 3.6°C in Demir Kapija (Figure 2).

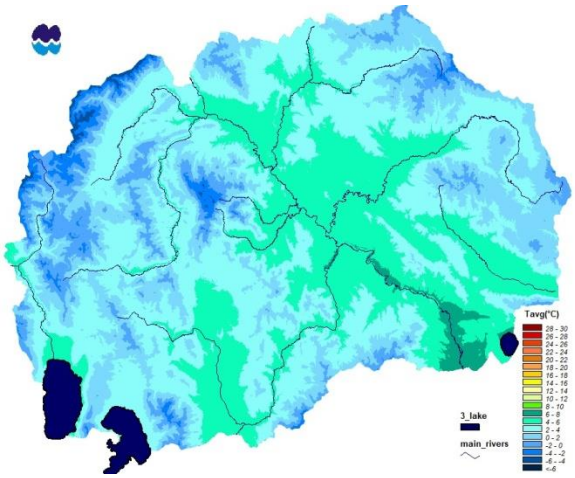

Figure 1: Spatial distribution of the mean seasonal air temperature (°C) for winter 2020/2021

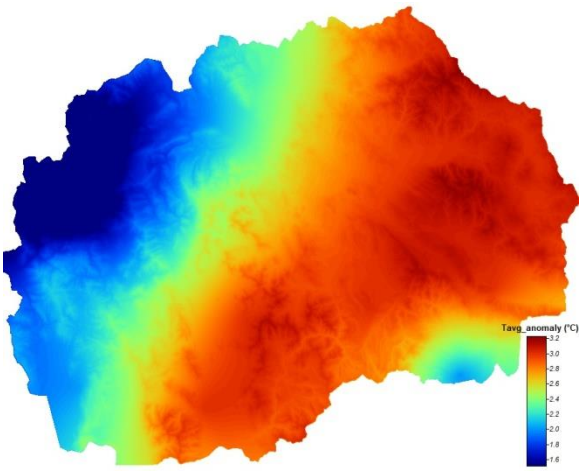

Figure 2: Mean seasonal air temperature anomaly (°C) compared to the period 1981-2010 for winter 2020/2021

The mean maximum seasonal air temperature was above normal, with positive anomaly reaching to 4.4°C in Strumica. The mean minimum seasonal air temperature was also above normal, with positive anomaly from 1.1°C in Lazaropole to 3.3°C in Prilep.

According to percentile calculation method, almost whole territory was classified as extremely warm (Table1).

The highest daily winter air temperature was measured 24.7°C observed on 27th of February in Gevgelija, and the lowest winter air temperature was -22.5°C observed on 16th of February in Bitola.

Rainfall totals were above the average 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 11th of January in Lazaropole with 49.9mm.

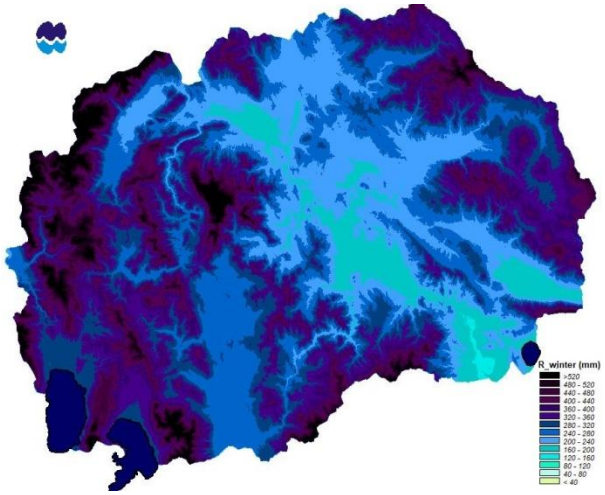

Figure 3: Spatial distribution of the precipitation sums (mm) during winter 2020/2021

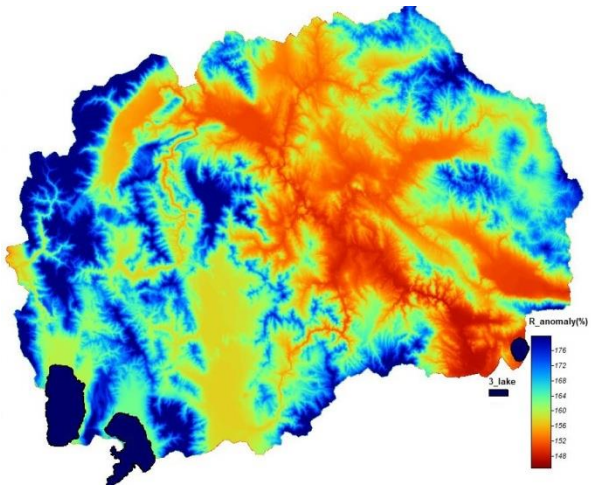

Figure 4: Spatial distribution of the precipitation sums anomaly (mm) during winter 2020/2021

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

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

Table1: Air temperature and precipitation classification in Republic of N. Macedonia for winter 2020/2021 using percentile method compared to 1981-2010 base period

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)	2020/2021	1981-2010	
		33	67
Berovo	2,8	-1.2	0.6
Kriva Palanka	3,9	0.4	1.4
Stip	5,9	1.8	3.2
Strumica	5,8	1.4	3.2
Demir Kapija	6,7	2.3	4.1
Gevgelija	7,3	4.5	5.6
Skopje	4,8	1.6	2.7
Prilep	4,3	0.5	2.3
Bitola	4,0	-0.5	2,0
Ohrid	5,1	2.1	3.1
Lazaropole	0,0	-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)	2020/2021	1981-2010	
		33	67
Berovo	268,8	109.5	662.9
Kriva Palanka	232,3	106.9	665.4
Stip	182,3	71.3	500
Strumica	229,2	120.9	602.8
Demir Kapija	230,8	125.7	597.7
Gevgelija	243,7	111.8	776
Skopje	142,2	87.5	521.6
Prilep	210,9	80.5	531.7
Bitola	249,0	145.0	675.7
Ohrid	304,1	178.8	749.9
Lazaropole	458,1	246.7	1064.5
Mavrovo	474,4	269.0	1172.7

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

The SEECOF-24 forecast for the mean temperatures for winter season put Republic of N. Macedonia in zone 2, which means to have more chances for warmer than normal conditions (Figure 5). Forecast for the precipitation for DJF 2020/2021 categorized our country in zone 2 (Figure6), which means that there is not clear signal.

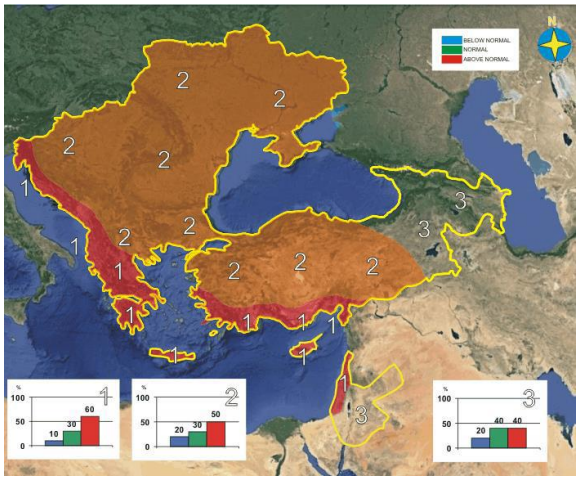

Figure 5: Graphical presentation of the winter 2020/2021 temperature outlook

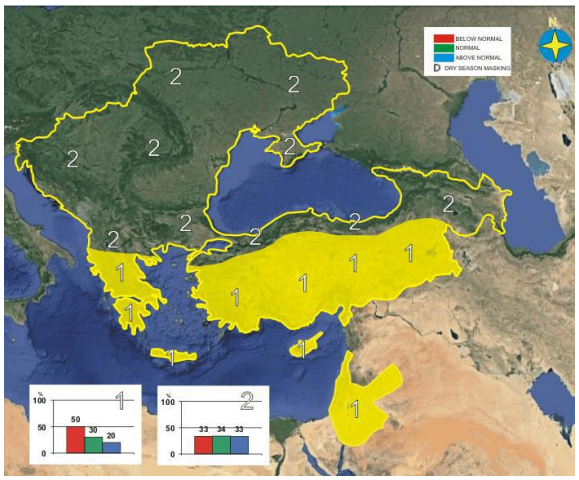

Figure 6: Graphical presentation of the winter 2020/2021 precipitation outlook

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	
REPUBLIC OF N.MACEDONIA	Above normal	Above normal (20, 30, 50)	Above normal	No signal (33, 34, 33)	