

Annex

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Assessment of the SEECOF-17 Climate Outlook for Slovenia for summer season 2017

SEECOF-17 Climate Outlook for Slovenia for the summer season 2017

As for the consensus statement of SEECOF-17 the season forecast for the summer season 2017 is particularly uncertain. The reason is the absence of any clear driver in the climate system and with it very weak large-scale signal. There is also low consistency among models. Climate of the region is also affected by the long-term increasing trend of the air and ocean temperature due to global warming. For these reasons, the consensus was that the entire SEECOF region was likely to experience above average summer temperature. The probability for above average summer temperature was increasing from northern and north-eastern parts of the region to southern parts (Figure 1). For Slovenia the probabilistic forecast for the tercile categories of anomalies for mean temperature, relative to the period 1981–2010, was 20 % for below, 30 % for near- and 50 % for above-average conditions (zone 2, Figure 1).



Figure 1. Graphical presentation of the summer 2017 temperature outlook

For precipitation, the uncertainties in regional prediction are higher than for temperature. The uncertainty for the entire SEECOF region was high, there was no clear signal for precipitation. Probabilities for below-, near- and above-average conditions were approximately equal (zone 1, Figure 2).

Figures 1 and 2 show the probabilistic consensus forecast for tercile categories of anomalies of seasonal temperature and precipitation, relative to the period 1981–2010.

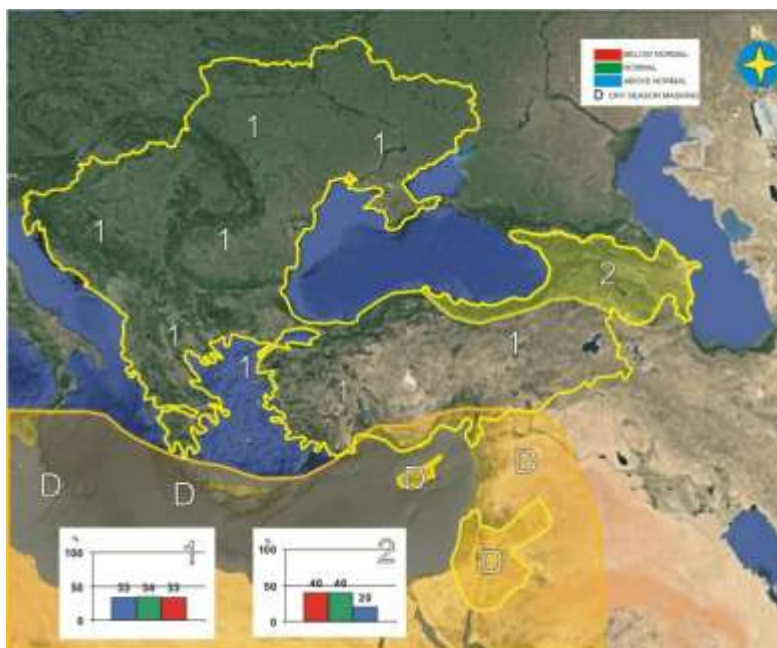


Figure 2. Graphical presentation of the summer 2017 precipitation outlook

Analysis of the summer season 2017

Average air temperature in summer 2017 in Slovenia was above the multi-annual average of the 30-year period 1981–2010 for the whole country (Figure 3). Corresponding air temperature anomalies for summer 2017 (months June, July and August) were between 1.4 °C to 3.0 °C, average anomaly was 2.2 °C (average value from 32 stations). Anomalies were largest in the southern parts of the country (above 2.5 °C) and the smallest in the north-western parts of the country (up to 2 °C).

According to tercile ranks, thermal conditions in Slovenia in summer 2017 were above normal, relative to the period 1981–2010 in the whole country (Figure 4).

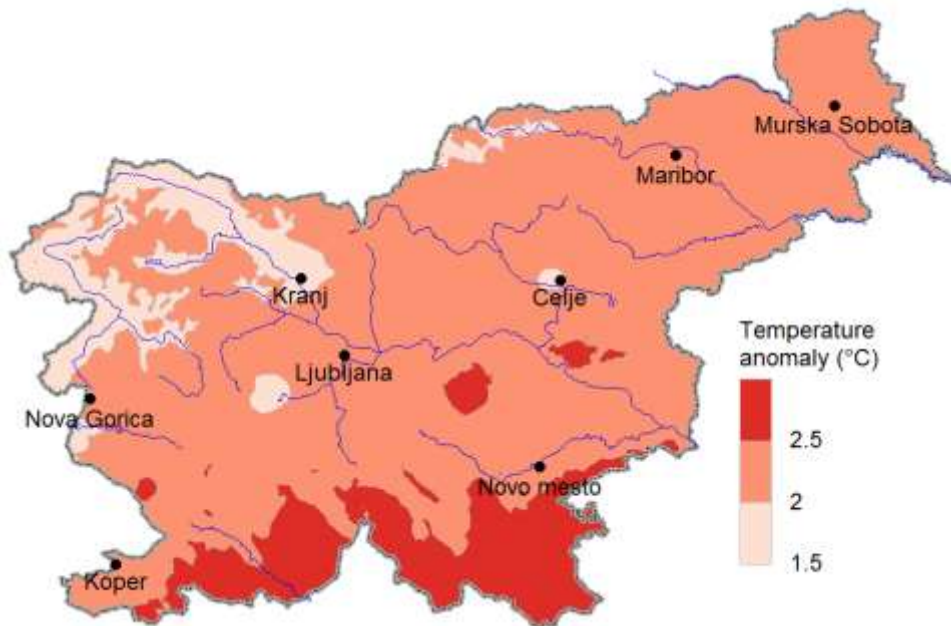


Figure 3. Mean air temperature anomaly in Slovenia in summer 2017, relative to the 1981–2010 average. Data are from 32 meteorological stations.

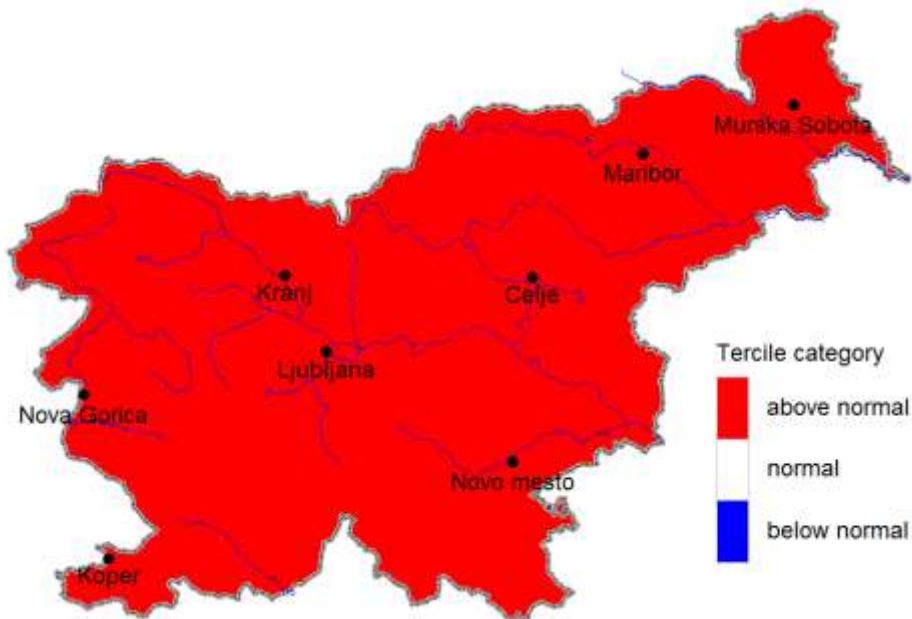


Figure 4. Mean air temperature tercile category of anomaly in Slovenia in summer 2017, relative to the period 1981–2010. Data are from 32 meteorological stations.

Precipitation index in summer 2017 in Slovenia, relative to the period 1981–2010, was mainly below average and above average only in the small western, north-western and north-eastern parts of the country (Figure 5). In the southern and east southern parts of the country the precipitation index didn't reach 70 %. Precipitation index was within the range from 39 % to 137 %, average precipitation index was 78 % (average value from 162 stations).

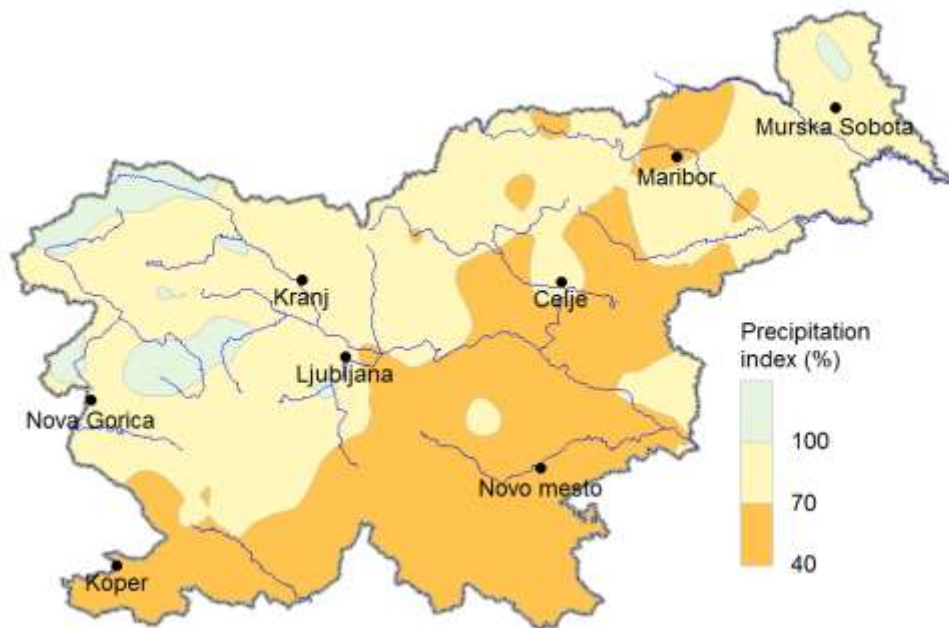


Figure 5. Precipitation index in Slovenia in summer 2017, relative to the 1981–2010 average. Data are from 162 meteorological stations.

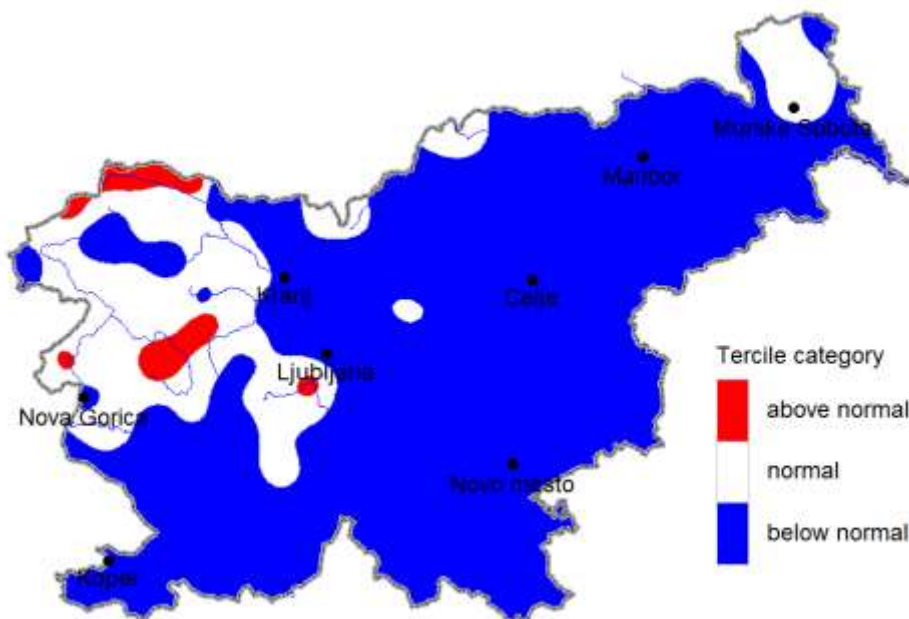


Figure 6. Precipitation tercile category of anomaly in Slovenia in summer 2017, relative to the period 1981–2010. Data are from 162 meteorological stations.

In the most part of Slovenia precipitation was within the first (below-normal) tercile, compared with 1981–2010 period (74 % of the stations), precipitation in 21 % stations was in the second (normal) tercile and in 5 % in above-normal tercile (Figure 6). Precipitation was normal in the north-western and north-eastern parts of Slovenia, whereas in the most part of the country precipitation was below normal. Very small parts of the country got precipitation in above normal tercile category.

Average air temperature in *June 2017* was above the multi-annual average of the 30-year period 1981–2010 in whole Slovenia. Air temperature anomalies were between 1.8 °C to 3.2 °C (Figure 7), average anomaly was 2.6 °C (average value from 32 stations). In some southern parts of the country anomalies exceeded 3 °C. According to tercile ranks, thermal conditions in Slovenia were above-normal, relative to the period 1981–2010, in the whole country.

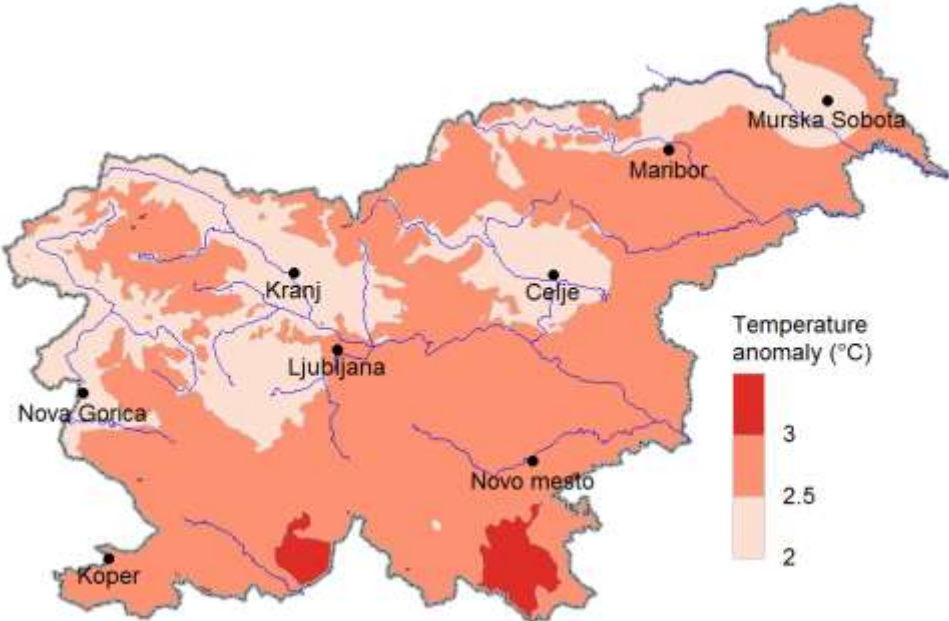


Figure 7. Mean air temperature anomaly in Slovenia in June 2017, relative to the 1981–2010 average. Data are from 32 meteorological stations.

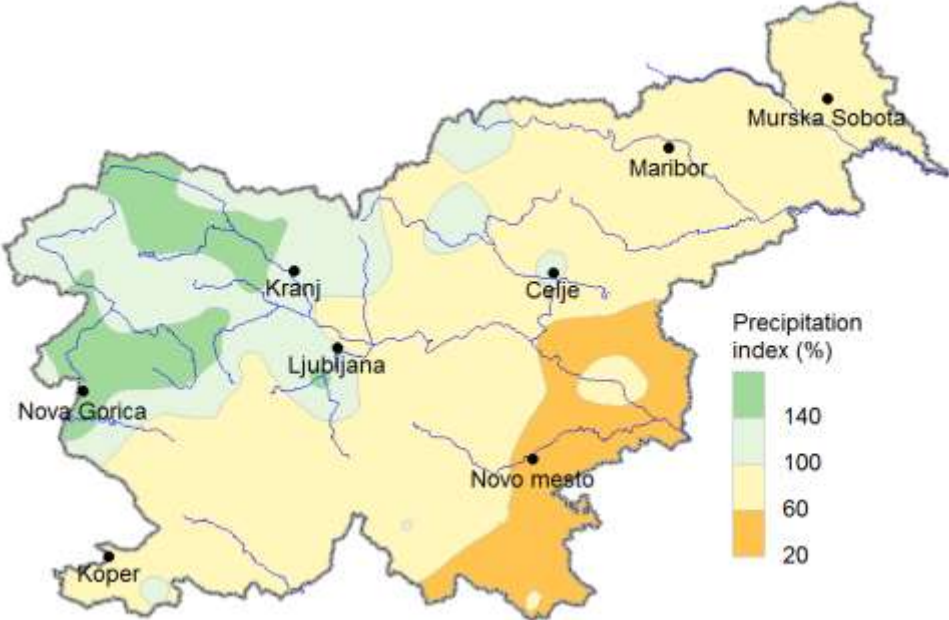


Figure 8. Precipitation index in Slovenia in June 2017, relative to the 1981–2010 average. Data are from 168 meteorological stations.

Precipitation index in *June 2017*, relative to the period 1981–2010, was below average in the area from south-west to north-east of the country and above average in the north-west of the country (Figure 8). Precipitation index was within the range from 36 % to 210 %, its average value was 97 % (average value from 168 stations).

Average air temperature in *July 2017* was also above the multi-annual average of the 30-year period 1981–2010. Anomalies were between 0.5 °C to 2.6 °C (Figure 9), their average value was 1.7 °C (average value from 32 stations). According to tercile ranks, thermal conditions in Slovenia were above-normal, relative to the period 1981–2010, for the whole country.

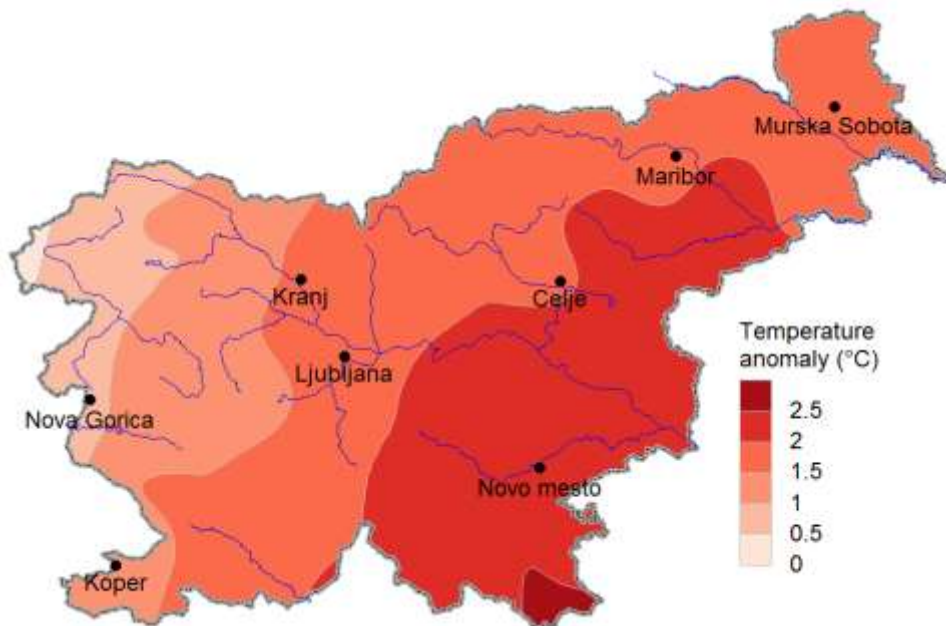


Figure 9. Mean air temperature anomaly in Slovenia in July 2017, relative to the 1981–2010 average. Data are from 32 meteorological stations.

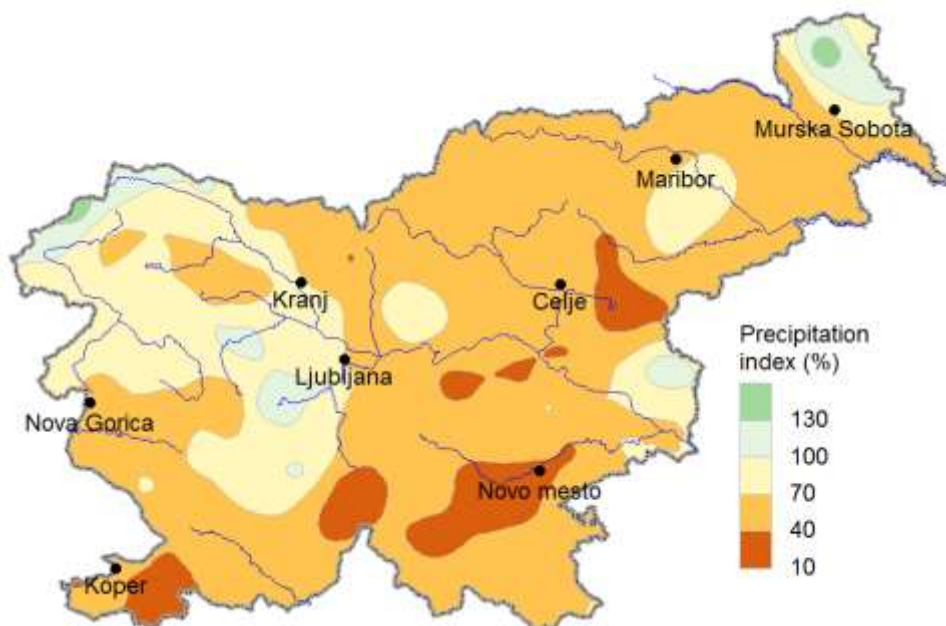


Figure 10. Precipitation index in Slovenia in July 2017, relative to the 1981–2010 average. Data are from 166 meteorological stations.

Precipitation index in *July 2017* was below 100 %, relative to the period 1981–2010, for the most of the country, except for the small north-eastern and north-western parts (Figure 10). Precipitation index was within the range from 16 % to 169 %, its average value was 65 % (average value from 166 stations). In the most of the country precipitation was within the first (below-normal) tercile, compared with the period 1981–2010 (70 % of the stations), in other parts precipitation was within the normal tercile (26 % of the stations). Only six weather stations (4 % of all stations) reported precipitation within above-normal tercile.

Average temperature conditions in *August 2017* were above average also. Air temperature anomalies were between 1.5 °C to 3.3 °C (Figure 11), the average anomaly was 2.3 °C (average value from 32 stations). Anomalies were the greatest in the south of Slovenia. According to tercile ranks, thermal conditions in Slovenia were above normal, relative to the period 1981–2010, for the whole country.

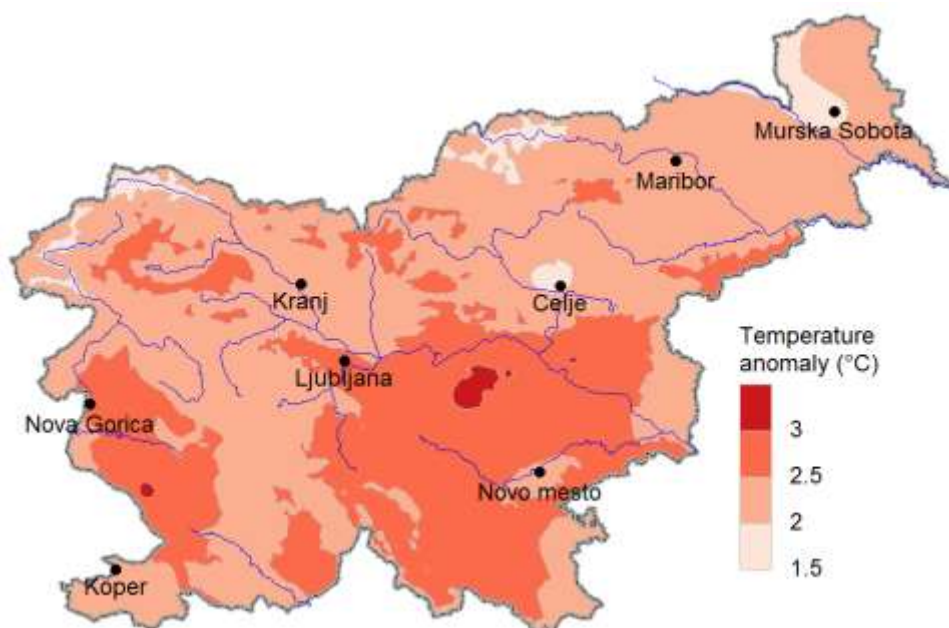


Figure 11. Mean air temperature anomaly in Slovenia in August 2017, relative to the 1981–2010 average. Data are from 32 meteorological stations.

Precipitation index in *August 2017*, relative to the period 1981–2010, was below average in the most of the country, except in some small parts of north-western and north-eastern Slovenia (Figure 12). Precipitation index was within the range from 30 % to 132 %, its average value was 70 % (average value from 162 stations). In the great part of Slovenia precipitation was within the first (below average) tercile, compared with the period 1981–2010 (74 % of the stations), precipitation was within normal tercile in 23 % of the stations and only 4 stations (4 % of all stations) reported precipitation within the third tercile.

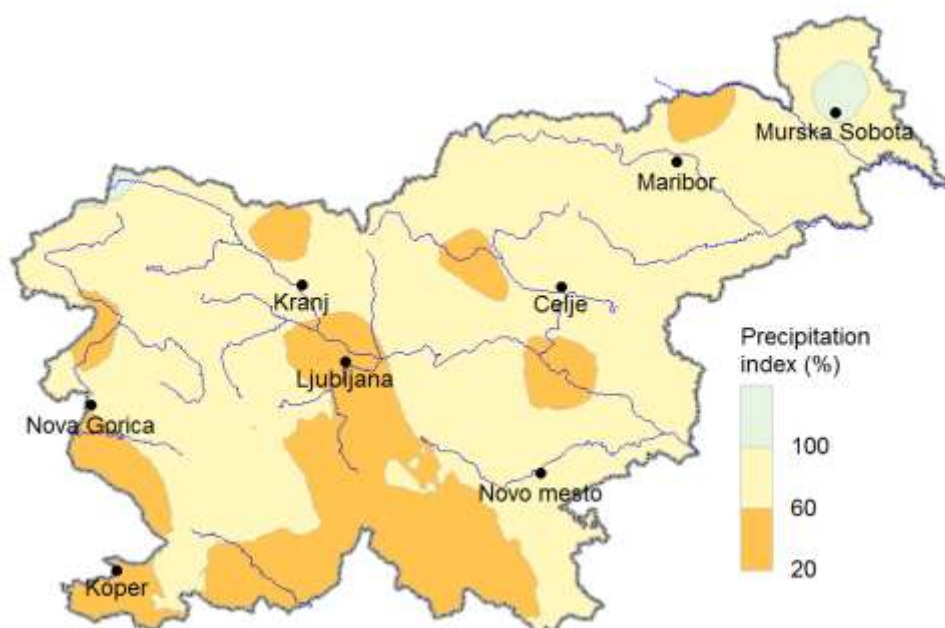


Figure 12. Precipitation index in Slovenia in August 2017, relative to the 1981–2010 average. Data are from 162 meteorological stations.

The summary for summer 2017 and monthly (June, July and August) temperature and precipitation conditions can be found in the Table 1.

Table 1. The summary for summer 2017 temperature and precipitation in Slovenia

SLOVENIA	Temperature anomaly, relative to the period 1981–2010	Average temperature anomaly	Precipitation index, relative to the period 1981–2010	Average precipitation index
June 2017	1.8 to 3.2 °C	2.6 °C	36 to 210 %	97 %
July 2017	0.5 to 2.6 °C	1.7 °C	16 to 169 %	65 %
August 2017	1.5 to 3.3 °C	2.3 °C	30 to 132 %	70 %
Summer 2017	1.4 to 3.0 °C	2.2 °C	39 to 137 %	78 %

High Impact Events

Highlights for summer 2017 in Slovenia:

- Second to fourth warmest summer since reliable records.
- Four heat waves.
- Highest observed temperature 40.6 °C in Podnanos (south west of Slovenia).
- June in the most of the country second warmest (second only to June 2003).
- Agricultural drought in south west, south east and north east of the country.

Verification of the SEECOF-17 Climate Outlook in Slovenia for summer season 2017

In the table 2 a verification summary of the SEECOF-17 climate outlook for the summer season 2017 (JJA) can be found. The climatological reference period is 1981–2010.

Table 2. SEECOF-17 climate outlook verification summary for Slovenia for summer 2017

Country	Seasonal temperature (JJA)		Seasonal precipitation (JJA)	
	Observed	SEECOF-17 climate outlook for temperature	Observed	SEECOF-17 climate outlook for precipitation
SLOVENIA	above-normal	warmer than normal	below-normal in the most of the country (except north-west and parts of northern and north-eastern Slovenia) normal in western Slovenia and parts of northern and north-eastern Slovenia above-normal in small parts of north-western Slovenia	no clear signal

Users' Perception of the SEECOF-17 Outlook

Slovenia Meteorological Service at the Slovenian Environment Agency at the moment doesn't provide seasonal outlook for the country.