

National Climate Bulletin and the assessment of the SEECOF-30 Climate outlook for **CYPRUS** for winter season DJF 2023-2024

Cyprus Department of Meteorology prepares regular seasonal climate outlooks, based on the products of SEECOF seasonal forecasts. The present outlook concerns the outlook for the three winter months of December 2023, January and February 2024, which is based on the means of the climatological period 1981-2010.

Generally, and based on the records of climatology, the area of the east Mediterranean, but specially the area of Cyprus, during winter is characterized by the low mean maximum and minimum normal (1981-2010) temperatures. Normal accumulated precipitation is reaching maximum as a result of the frequent barometric systems which are affecting the area.

The assessment for the area of Cyprus is performed bearing in mind the consensus statement of SEECOF-30 which was stating that:

1. Temperature (the mean) was likely to range below normal with a probability of 10%, around normal with a probability of 30% and above normal with again a probability of 60% (Figure 1) and,
2. Accumulated precipitation probabilities were 20% below normal, 30% around normal and 50% above normal (Figure 2).

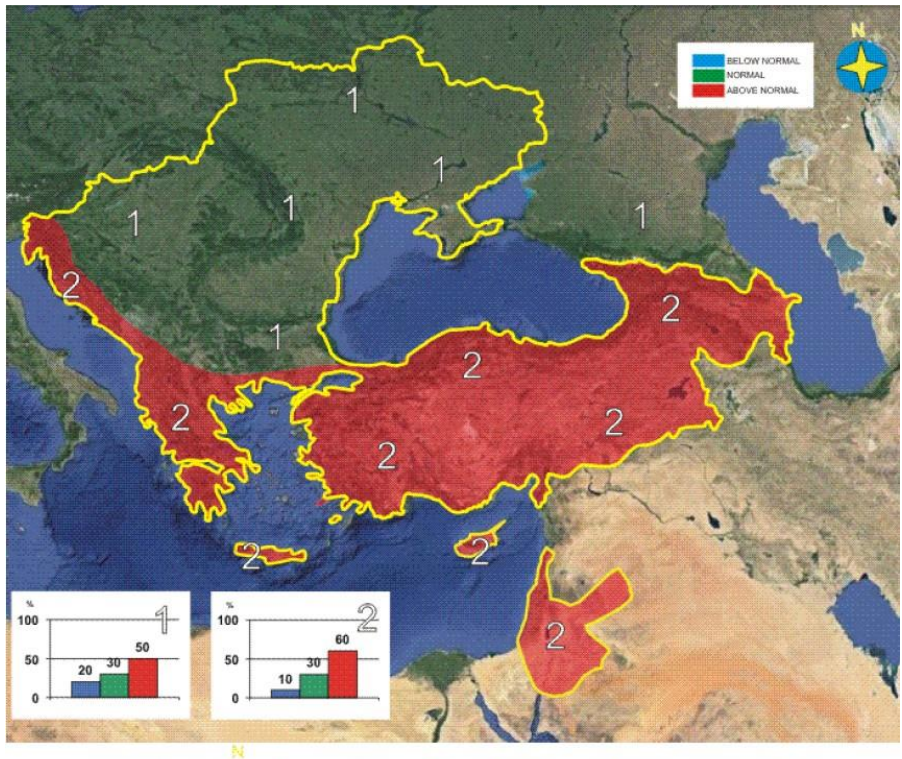


Figure 1. Graphical presentation of the 2023/24 winter temperature outlook

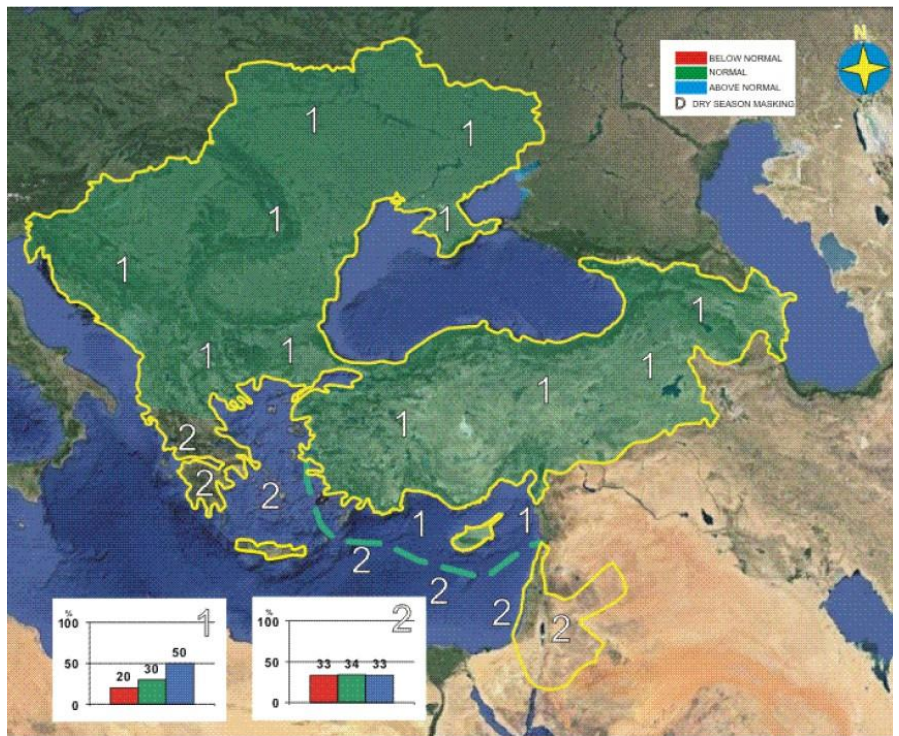


Figure 2. Graphical presentation of the 2023/24 winter precipitation outlook

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

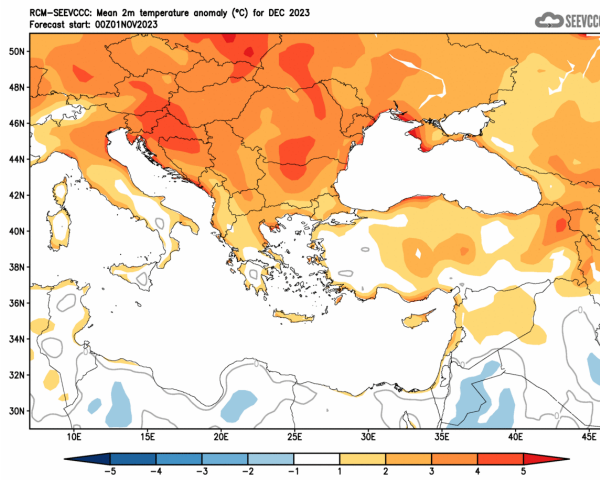
Country	Seasonal temperature (DJF)		Seasonal precipitation (DJF)		High Impact Events
	Observed	SEECOF-30 climate outlook for temperature	Observed	SEECOF-30 climate outlook for precipitation	
CYPRUS	<p>DEC Well Above Normal</p> <p>JAN Well Above Normal</p> <p>FEB Well Above Normal</p>	<p>DEC Above Normal</p> <p>JAN Above Normal</p> <p>FEB Above Normal</p>	<p>DEC Well Below Normal</p> <p>JAN Above Normal</p> <p>FEB Well Below Normal</p>	<p>DEC Below Normal</p> <p>JAN Below Normal</p> <p>FEB Below Normal</p>	<p>DEC: Extremes (deviating by 4°C or more from normal) were also recorded in all of the selected meteorological stations. As an example, note the recorded maximum of Prodromos that was 17.1°C (with a normal of 8.3°C) and the maximum of Polis Chrysochous and Athalassa that was 26°C (with a normal of 18°C) and 25.3°C (with a normal of 17.3°C). Concerning the mean daily minimum temperatures note the recorded minimum of Larnaca airport that was 16.8°C (with a normal of 9.2°C) and the minimum of Prodromos that was 9.3°C (with a normal of 2.6°C).</p> <p>From the distribution (provisional accumulated precipitation chart) of the accumulated precipitation of December is evident that the surface distribution was well below normal reaching 50.9mm or 54% of normal. During the periods 6-12, 16 and 21-23 of December local showers and isolated thunderstorms were recorded.</p> <p>For the 8th, 11th and 21st of December, yellow EMMA warning was issued concerning showers and thunderstorms.</p> <p>Based on the provisional data, hail was recorded on the 6th, 11th, 12th and in the 20th of the month while there was no report for snow over Troos.</p> <p>JAN: Extreme high temperatures were also recorded, with positive departures greater than 4°C, as at Polis Chrysochou station where the highest maximum daily temperature of 23.8°C was by 7.5°C higher than normal. Also, the highest maximum daily temperature at Achna station (23.6°C) was by 7.3°C higher than normal. Extreme minimum temperatures with positive departure greater than 4°C were also recorded. For example, at Paphos airport station the highest daily minimum temperature (17.1°C) was by 8.8°C higher than normal, while at Athalassa's and Larnaca's airport stations this was by 7°C higher than the corresponding normal one.</p>

				<p>From the provisional data recorded by the Department of Meteorology the model did not perform well over the amount of the accumulated precipitation, as the actual accumulated precipitation was more than the expected over the entire island.</p> <p>During the periods 1-5, 8-19 and 21-31 of January local showers and thunderstorms resulted in accumulated precipitation of 115.4mm or 139% of normal. It is worth mentioning that on the 10th, the 26th and the 28th of January hail was reported. Also, for the 10th and the 22nd of January, EMMA yellow level warnings for thunderstorms were issued, while on the 12th of January EMMA yellow level warning was issued for rainfall. On the 29th of January, EMMA orange level warning for thunderstorms was issued, as well.</p> <p>It is worth mentioning that based on the provisional snowfall was reported for the periods 10, 12-15, 25-26 and 28-31 of January.</p> <p>FEB: Extreme high temperatures were also recorded at the selected meteorological stations. Prodromos, for example, recorded a highest daily maximum of 15.2°C (with the normal being 6.7°C) and Athalassa that recorded a highest daily maximum of 22.9°C (with the normal being 16°C). Extreme low temperatures (deviating by 4°C or more from normal) were also recorded. As an example, note the highest daily minimum temperatures of Pafos airport and Athalassa that were 17°C (with a normal of 8.1°C) and 13.2°C (with a normal of 5.3°C), respectively.</p> <p>Regarding the cumulative rain, it seems that February recorded a disappointing rainfall as it was only 55% of the month's normal. As can be seen from the distribution map of the provisional accumulated precipitation for February below, the average surface distribution reached only 38.2mm or 55% of the normal of the month.</p> <p>During the periods 1-5, 9-10, 13-18, 20-21 and 25-26 of February local showers and thunderstorms were recorded.</p> <p>Based on the provisional data, hail was recorded on the 9th, the 13th and the 14th of the month, while snow was recorded during the 1st of the month, during the period between 2-4, the 15th and the 18th of the month.</p>
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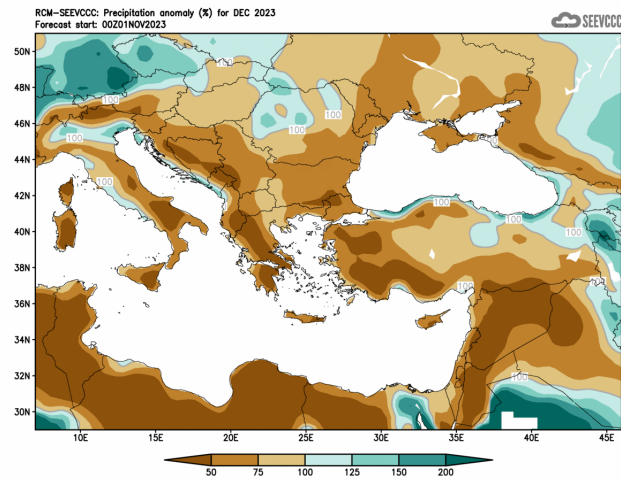
					During the periods 13-16 and 18-19 of February , yellow EMMA warnings were issued concerning showers and thunderstorms.
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Evaluation of December’s seasonal forecast for the area of Cyprus

The seasonal forecast for **December 2023** suggested that temperature would be above normal, by 1°C to 2°C. The accumulated precipitation of **December** was forecasted to be disappointing, since the model suggested a mainly dry month with accumulation ranging only from 50% to 75% of normal. Similar conditions, with low accumulations of precipitation characterized all the surrounding area.



Divergence of the mean monthly temperature (°C) from normal during December, 2023



Percentage of the mean monthly precipitation (%) compared with the normal of December, 2023

From the provisional data recorded by the Department of Meteorology, for the selected portion of the meteorological stations, which are presented in the table below, is evident that the model partly behaved well with respect to temperature. This is because the average daily maximum and minimum temperatures were indeed higher than expected, however they were not higher by 1-2°C than normal but the mean daily maximum were by 2.7-4.5°C above normal and the mean daily minimum were by 2-3.3°C above normal. The seasonal forecast for **December** suggested that the accumulated precipitation would be below normal, ranging only from 50% to 75% of normal, but from the recorded data is shown that in all of the selected meteorological stations the precipitation was well below normal.

TEMPERATURE AND PRECIPITATION PROVISIONAL DATA FOR DECEMBER 2023

St. No.	Station Name	Temperature (°C)					Temperature (°C)					Precipitation (mm)		
		Mean Daily Maximum	Normal Value (1981-2010)	Difference from Normal Value	Highest Daily Maximum	Lowest Daily Maximum	Mean Daily Minimum	Normal Value (1981-2010)	Difference from Normal Value	Lowest Daily Minimum	Highest Daily Minimum	Monthly Total	Normal Value (1981-2010)	Difference from Normal Value
41	POLIS CHRYSOCHOUS	22.5	18.0	4.5	26.0	18.7	12.0	9.3	2.7	8.2	15.2	67.9	93.6	-25.7
82*	PAFOS (AIRPORT)	21.6	18.9	2.7	23.7	19.3	12.3	10.0	2.3	9.4	16.1	44.2	90.2	-46.0
225	PRODROMOS (C.F.C.)	11.4	8.3	3.1	17.1	6.0	5.1	2.6	2.5	1.8	9.3	96.3	157.3	-61.0
666*	ATHALASSA (RADICSONDE)	21.1	17.3	3.8	25.3	17.3	9.0	7.0	2.0	5.9	12.6	38.8	55.8	-17.0
731	LARNAKA (AIRPORT)	22.1	18.6	3.5	24.8	20.1	12.5	9.2	3.3	7.5	16.8	36.0	79.1	-43.1
800**	ACHINA (DASAKI)	22.2	18.0	4.2	25.4	18.2	11.3	8.3	3.0	8.3	14.9	28.6	76.8	-48.2

* Pafos* and Athalassa's Station Normal Values cover the period 1983-2010

** Achina's Temperature Normal Values cover the period 1981-2007



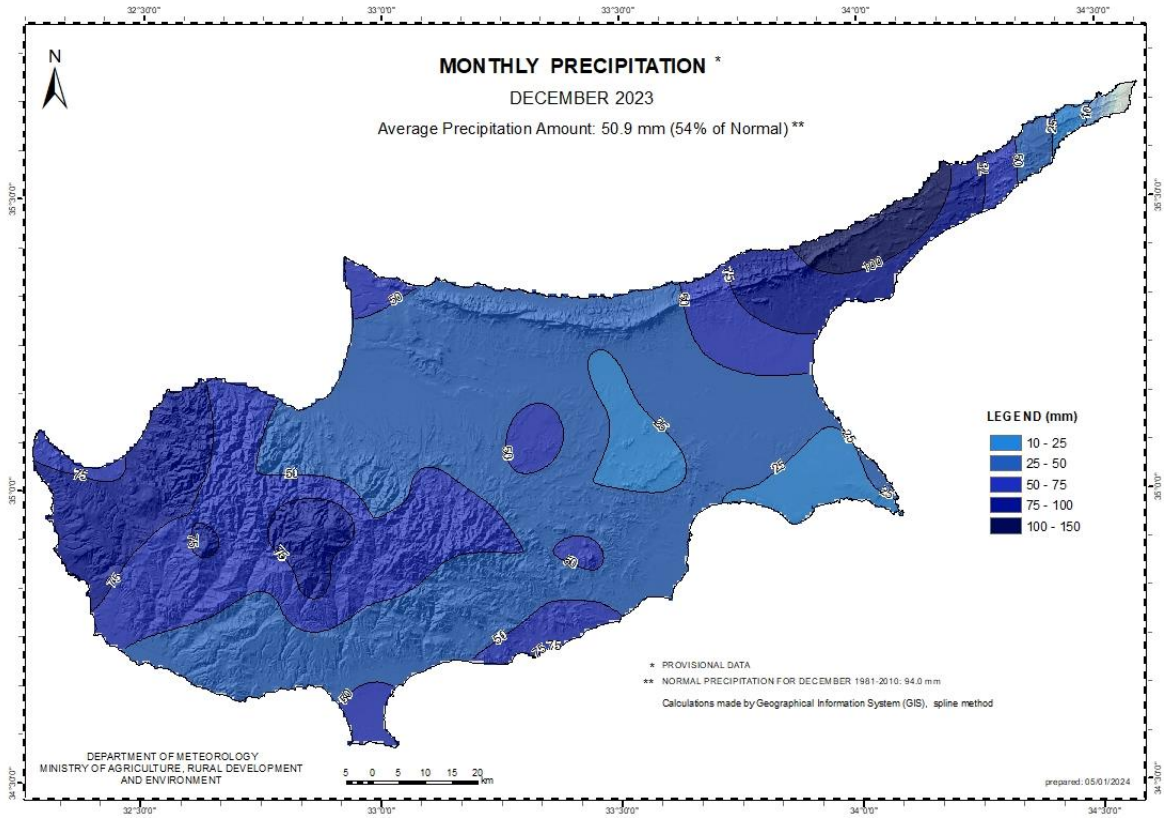
Extremes (deviating by 4°C or more from normal) were also recorded in all of the selected meteorological stations. As an example, note the recorded maximum of Prodromos that was 17.1°C (with a normal of 8.3°C) and the maximum of Polis Chrysochous and Athalassa that was 26°C (with a normal of 18°C) and 25.3°C (with a normal of 17.3°C). Concerning the mean daily minimum temperatures note the recorded minimum of Larnaca airport that was 16.8°C (with a normal of 9.2°C) and the minimum of Prodromos that was 9.3°C (with a normal of 2.6°C).

From the distribution (provisional accumulated precipitation chart) of the accumulated precipitation of **December** is evident that the surface distribution was well below normal reaching 50.9mm or 54% of normal. During the periods 6-12, 16 and 21-23 of **December** local showers and isolated thunderstorms were recorded.

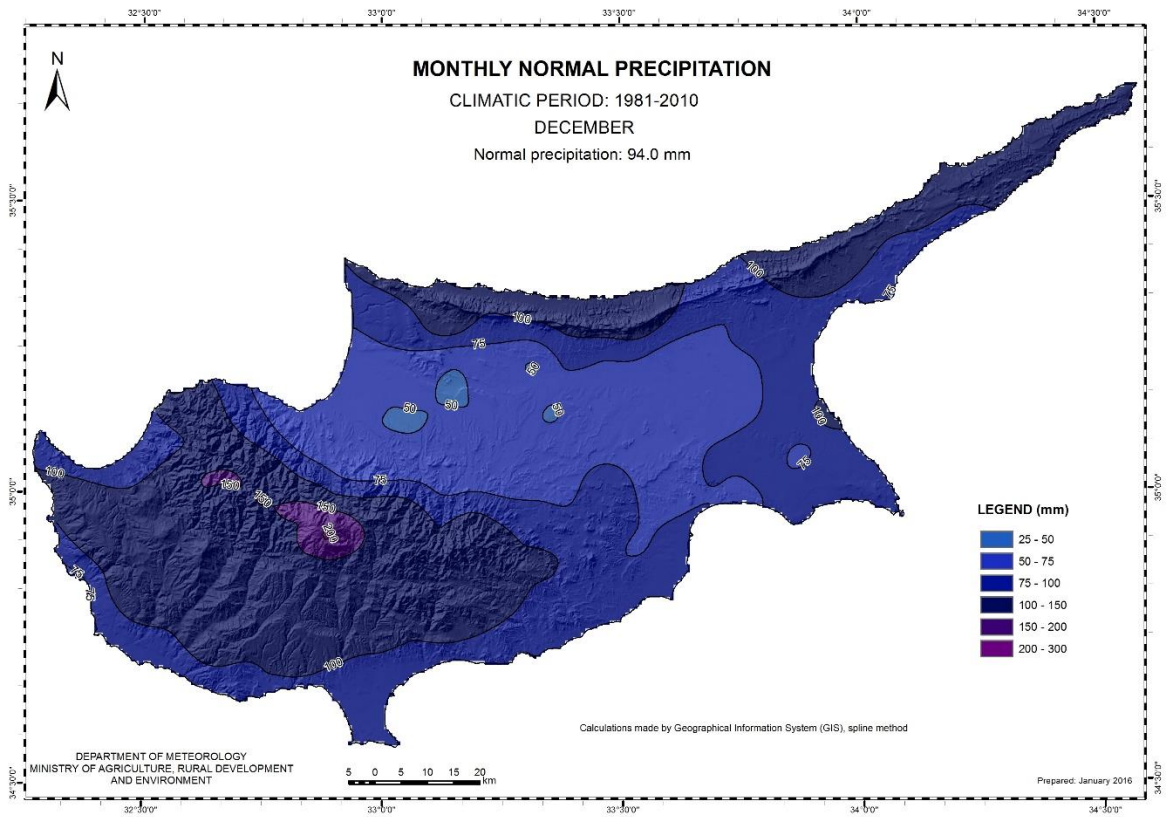
For the 8th, 11th and 21st of **December**, yellow EMMA warning was issued concerning showers and thunderstorms.

Based on the provisional data, hail was recorded on the 6th, 11th, 12th and in the 20th of the month, while there was no report for snow over Troodos.

For the purpose of better visualization of **December** accumulated precipitation, a chart of Cyprus with the total preliminary accumulated precipitation is presented.

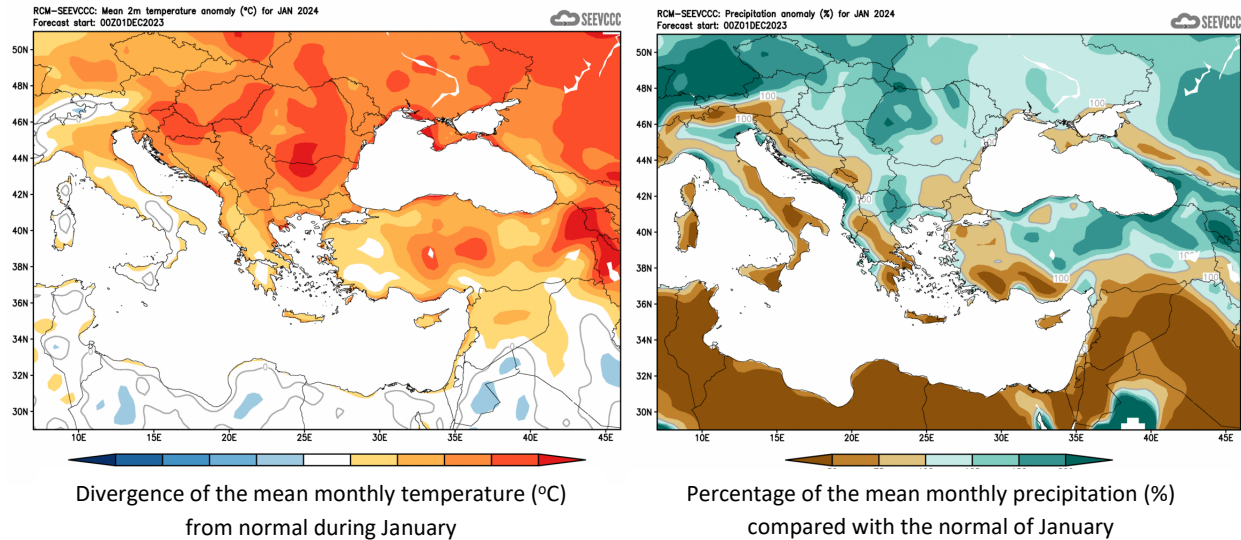


A Cyprus chart with the normal (period 1981 to 2010) accumulated precipitation for the month of **December** is also presented.



Evaluation of January's seasonal forecast for the area of Cyprus

The seasonal forecast for **January** suggested that temperature would be above normal, by 1°C to 2°C. The accumulated precipitation of **January** was to be again disappointing, since the forecast suggested a mainly dry month with accumulation ranging between 50% to 75% of normal. Low accumulations were characterizing all the surrounding area, as well.



From the provisional data recorded by the Department of Meteorology, for the selected portion of the meteorological stations, which are presented in the table below, it seems that the model performed relatively well in relation to the expected temperatures, since January was indeed warmer than normal. However, the seasonal model did not correctly estimate how much warmer this month would be. The estimate was for 1°C to 2°C warmer than normal, however January was, in the majority of stations, by 2°C to 3.3°C warmer than normal, both in relation to the average daily maximum temperature and also in relation to the average daily minimum temperature.

TEMPERATURE AND PRECIPITATION PROVISIONAL DATA FOR JANUARY 2024														
St. No.	Station Name	Mean Daily Maximum Temperature (°C)	Normal Value (1981-2010)	Difference from Normal Value	Highest Daily Maximum Temperature (°C)	Lowest Daily Maximum Temperature (°C)	Mean Daily Minimum Temperature (°C)	Normal Value (1981-2010)	Difference from Normal Value	Lowest Daily Minimum Temperature (°C)	Highest Daily Minimum Temperature (°C)	Monthly Total Precipitation (mm)	Normal Value (1981-2010)	Difference from Normal Value
		41	POLIS CHRYSOCHOUS	19.6	16.3	3.3	23.8	15.3	10.8	7.6	3.2	5.0	14.5	79.1
82*	PAFOS (AIRPORT)	18.9	17.1	1.8	22.2	14.2	11.4	8.3	3.1	5.7	17.1	82.5	78.8	3.7
225	PRODROMOS (C.F.C.)	7.5	6.3	1.2	12.7	0.4	2.4	0.7	1.7	-2.4	7.6	154.1	150.0	4.1
666*	ATHALASSA (RADIOSONDE)	18.2	15.5	2.7	22.1	11.9	7.4	5.4	2.0	3.0	12.4	92.5	48.8	43.7
731	LARNAKA (AIRPORT)	19.5	16.8	2.7	24.0	14.3	10.3	7.5	2.8	5.8	14.5	86.6	73.7	12.9
800**	ACHNA (DASAKI)	19.0	16.3	2.7	23.6	13.1	9.0	6.6	2.4	5.1	12.7	78.3	67.3	11.0

* Pafos' and Athalassa's Station Normal Values cover the period 1983-2010

** Achna's Temperature Normal Values cover the period 1981-2007

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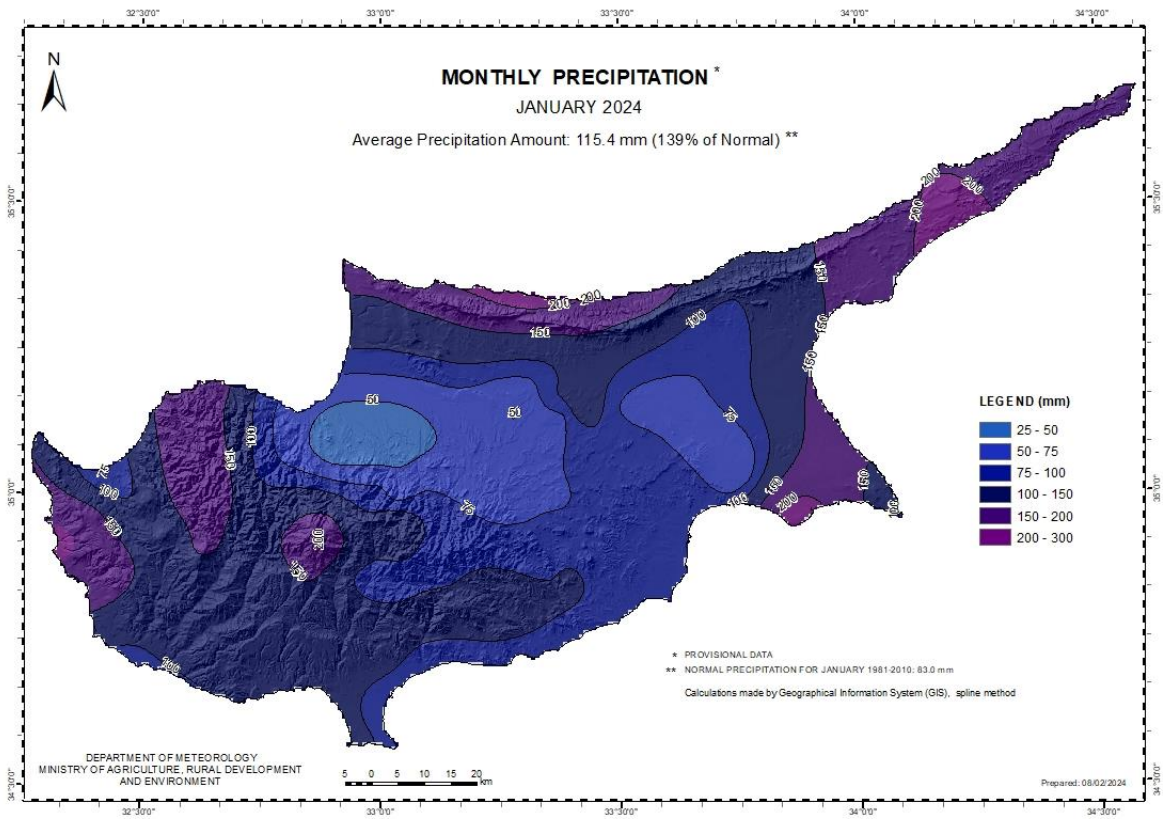
Extreme high temperatures were also recorded, with positive departures greater than 4°C, as at Polis Chrysochou station where the highest maximum daily temperature of 23.8°C was by 7.5°C higher than normal. Also, the highest maximum daily temperature at Achna station (23.6°C) was by 7.3°C higher than normal. Extreme minimum temperatures with positive departure greater than 4°C were also recorded. For example, at Paphos airport station the highest daily minimum temperature (17.1°C) was by 8.8°C higher than normal, while at Athalassa's and Larnaka's airport stations this was by 7°C higher than the corresponding normal one.

From the provisional data recorded by the Department of Meteorology the model did not perform well over the amount of the accumulated precipitation, as the actual accumulated precipitation was more than the expected over the entire island.

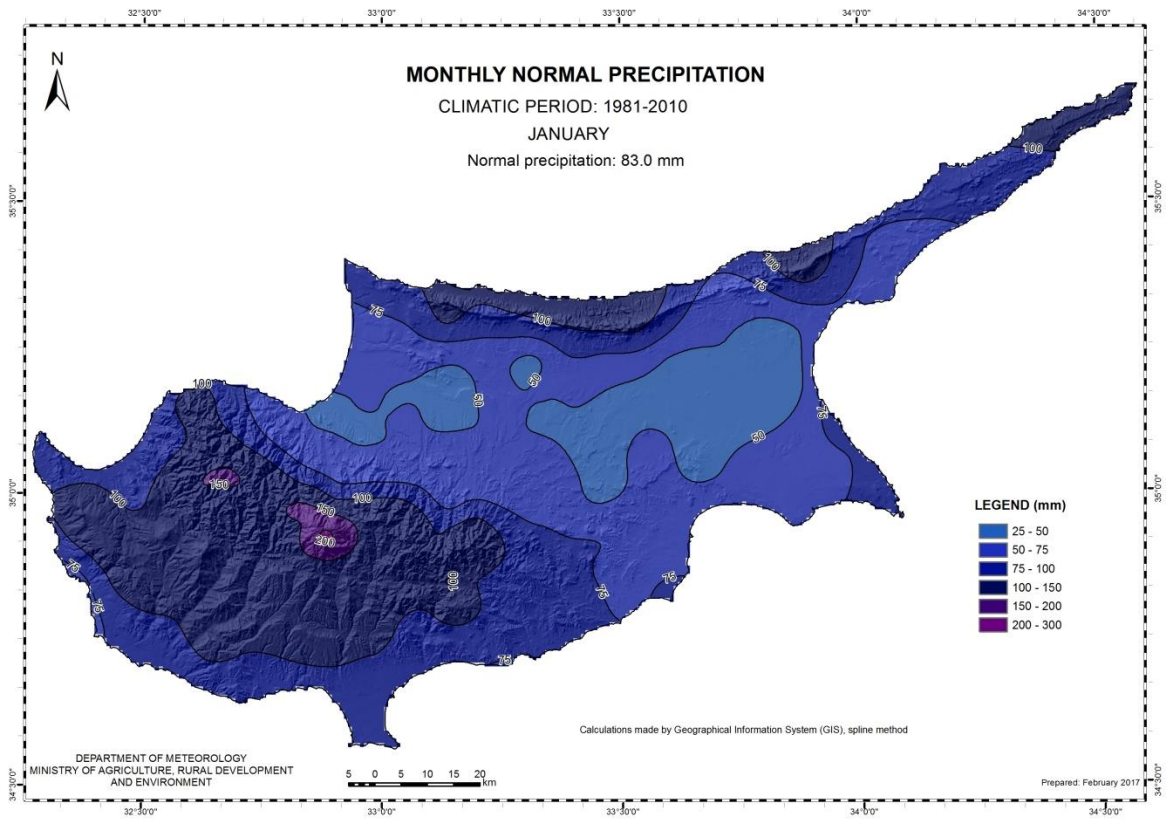
During the periods 1-5, 8-19 and 21-31 of **January** local showers and thunderstorms resulted in accumulated precipitation of 115.4mm or 139% of normal. It is worth mentioning that on the 10th, the 26th and the 28th of **January** hail was reported. Also, for the 10th and the 22nd of **January**, EMMA yellow level warnings for thunderstorms were issued, while on the 12th of January EMMA yellow level warning was issued for rainfall. On the 29th of January, EMMA orange level warning for thunderstorms was issued, as well.

It is worth mentioning that based on the provisional snowfall was reported for the periods 10, 12-15, 25-26 and 28-31 of **January**.

For the purpose of better visualization of **January** accumulated precipitation, a chart of Cyprus with the total preliminary accumulated precipitation is presented.

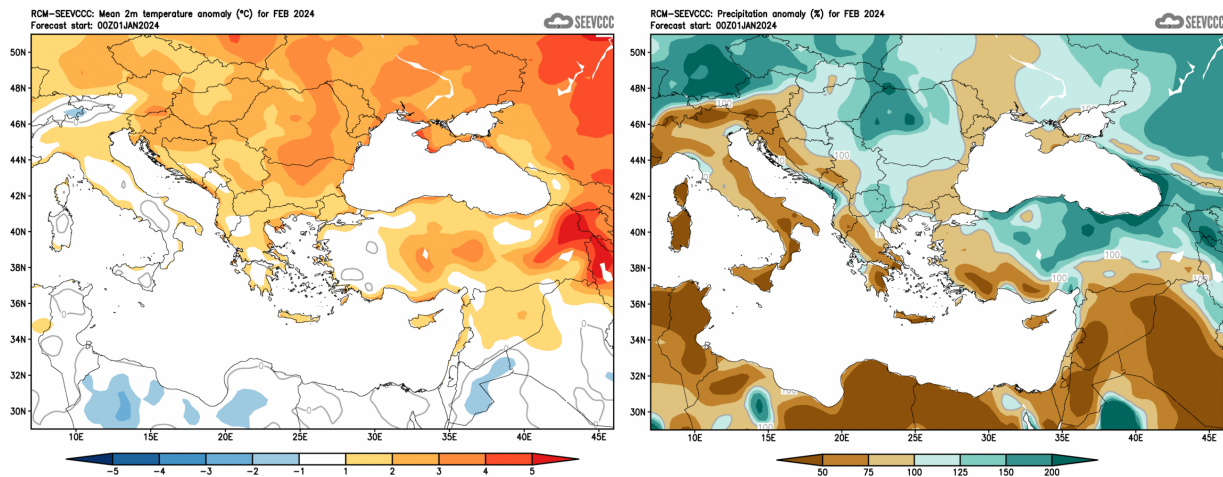


A Cyprus chart with the normal (period 1981 to 2010) accumulated precipitation for the month of **January** is also presented.



Evaluation of February's seasonal forecast for the area of Cyprus

The seasonal forecast for **February** suggested a warmer and drier than normal month. **February** would have been warmer than normal by 1°C to 2°C. The accumulated precipitation, as resulted from the seasonal forecast, was to be again disappointing since the forecast suggested a mainly dry month with accumulation ranging between 50% and 75% of normal. All the above, regarding temperature and accumulated precipitation characteristics, would also apply for the surrounding area.



Divergence of the mean monthly temperature (°C)
from normal during February

Percentage of the mean monthly precipitation (%)
compared with the normal of February

From the provisional data recorded by the Department of Meteorology, for the selected portion of the meteorological stations, which are presented in the table below, it seems that the model did not perform well at all. **February** was well above normal, in contrast to the seasonal forecast that suggested a warmer than normal month by 1 to 2°C. Extreme high temperatures were also recorded at the selected meteorological stations. Prodromos, for example, recorded a highest daily maximum of 15.2°C (with the normal being 6.7°C) and Athalassa that recorded a highest daily maximum of 22.9°C (with the normal being 16°C). Extreme low temperatures (deviating by 4°C or more from normal) were also recorded. As an example, note the highest daily minimum temperatures of Pafos airport and Athalassa that were 17°C (with a normal of 8.1°C) and 13.2°C (with a normal of 5.3°C), respectively.

TEMPERATURE AND PRECIPITATION PROVISIONAL DATA FOR FEBRUARY 2024

St. No.	Station Name	Mean Daily Maximum Temperature (°C)	Normal Value (1981-2010)	Difference from Normal Value	Highest Daily Maximum Temperature (°C)	Lowest Daily Maximum Temperature (°C)	Mean Daily Minimum Temperature (°C)	Normal Value (1981-2010)	Difference from Normal Value	Lowest Daily Minimum Temperature (°C)	Highest Daily Minimum Temperature (°C)	Monthly Total Precipitation (mm)	Normal Value (1981-2010)	Difference from Normal Value
41	POLIS CHRYSOCHOUS	19.8	16.3	3.5	22.1	17.5	9.2	7.3	1.9	5.3	14.1	40.1	68.5	-28.4
82*	PAFOS (AIRPORT)	19.1	17.1	2.0	22.1	16.1	9.9	8.1	1.8	7.3	17.0	35.3	59.8	-24.5
225	PRODROMOS (C.F.C.)	9.9	6.7	3.2	15.2	3.6	2.0	0.5	1.5	-2.1	7.6	34.1	128.7	-94.6
666*	ATHALASSA (RADIOSONDE)	18.7	16.0	2.7	22.9	14.5	6.8	5.3	1.5	2.4	13.2	18.4	44.5	-26.1
731	LARNAKA (AIRPORT)	19.8	17.0	2.8	22.6	15.8	9.3	7.1	2.2	5.9	14.7	34.0	50.3	-16.3
800**	ACHNA (DASAKI)	19.8	16.5	3.3	22.7	16.4	8.3	6.3	2.0	4.5	13.9	36.7	50.7	-14.0

* Pafos' and Athalassa's Station Normal Values cover the period 1983-2010

** Achna's Temperature Normal Values cover the period 1981-2007

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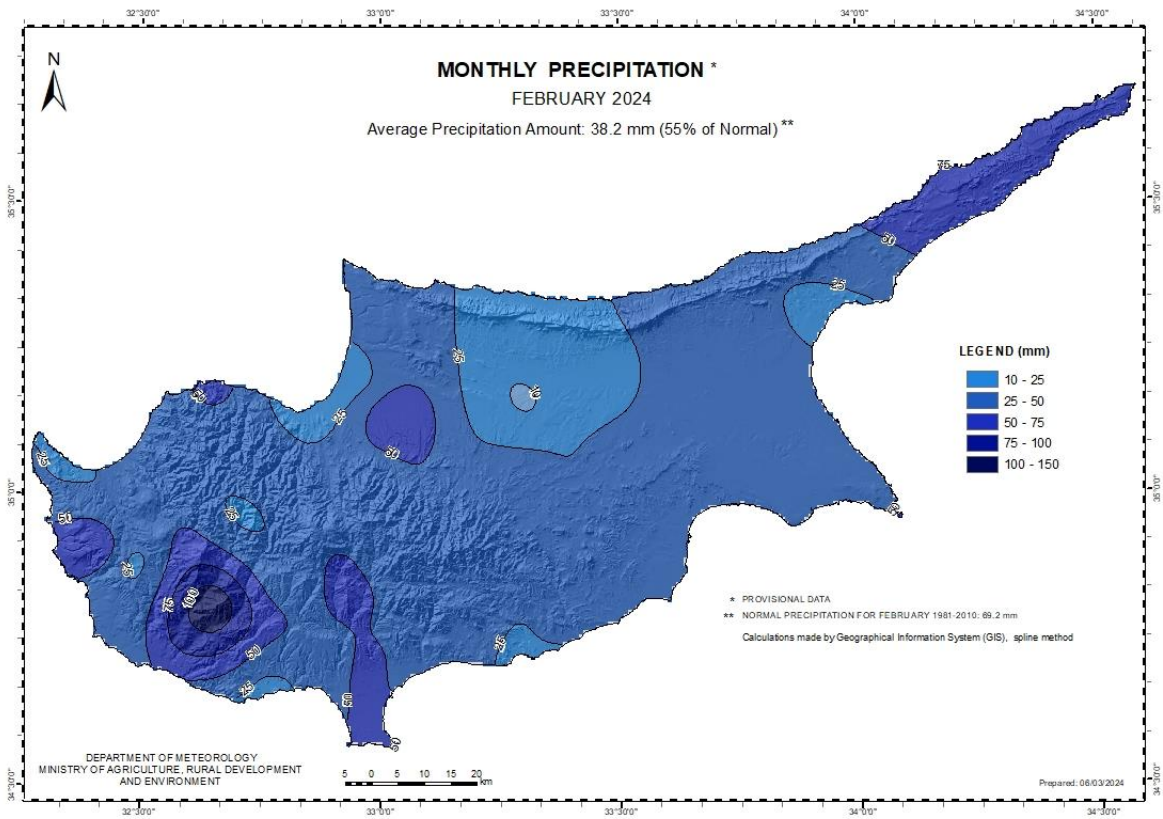
Regarding the cumulative rain, it seems that **February** recorded a disappointing rainfall as it was only 55% of the month's normal. As can be seen from the distribution map of the provisional accumulated precipitation for February below, the average surface distribution reached only 38.2mm or 55% of the normal of the month.

During the periods 1-5, 9-10, 13-18, 20-21 and 25-26 of **February** local showers and thunderstorms were recorded.

Based on the provisional data, hail was recorded on the 9th, the 13th and the 14th of the month, while snow was recorded during the 1st of the month, during the period between 2-4, the 15th and the 18th of the month.

During the periods 13-16 and 18-19 of **February**, yellow EMMA warnings were issued concerning showers and thunderstorms.

For the purpose of better visualization of **February's** accumulated precipitation, a chart of Cyprus with the total preliminary accumulated precipitation is presented, below.



A Cyprus chart with the normal (period 1981 to 2010) accumulated precipitation for the month is also presented.

