MEDITERRANEAN CLIMATE OUTLOOK FORUM
MEDCOF-25 Online Forum

ANALYSIS AND VERIFICATION
OF THE MEDCOF-24 CLIMATE OUTLOOK
FOR THE 2025 SUMMER SEASON
FOR THE MEDITERRANEAN REGION (MED)

Final version

Last update: 28 November 2025

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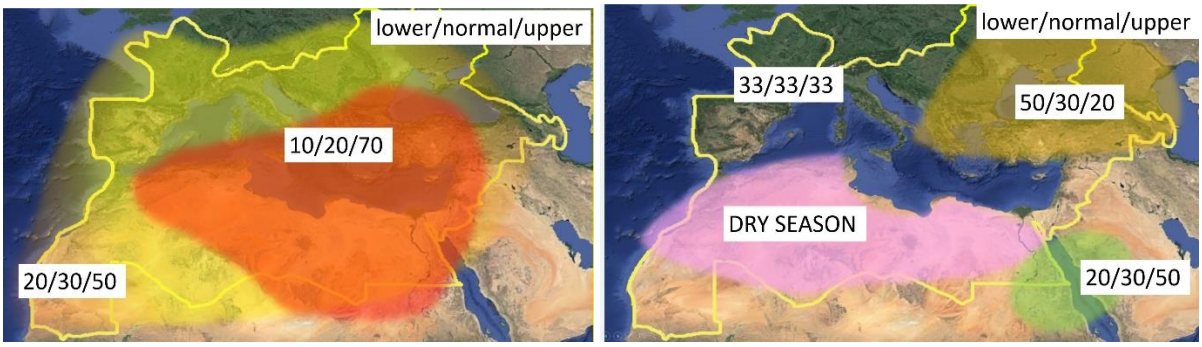
The following MedCOF verification report is based on

- the outcome of the consensus forecast of MedCOF-24,
- climate monitoring results of RA I NA RCC and RA VI RCC networks,
- the verification bulletin of Météo France,
- the analysis and verification report of SEECOF-34 for 2025 summer season for southeast Europe (SEE)
- national verification reports received from NMHSs or posted in RCOF forums of MedCOF, SEECOF or PRESANORD.

1 MedCOF-24 Climate outlook for the 2025 summer season



(a) (b)

Figure 1: Graphical presentation of the climate outlook for the 2025 summer season for the Mediterranean region (a) Temperature Outlook, (b) Precipitation Outlook

Sea surface temperature and general circulation

As stated in the MedCOF-24 consensus statement, observed sea surface temperatures showed neutral ENSO and Indian Ocean Dipole conditions, a situation that was expected to continue in the following months, according to forecasts from models. Over the Atlantic, the equator and Tropics, SSTs were slightly warm, with more marked positive anomalies over the north-eastern part of the basin.
In the atmosphere, models showed a trend to upward motion over the Indian Ocean and downward motion over the tropical Pacific. Anticyclonic anomalies extended from Middle East to Eastern Mediterranean and Southern Europe.

Temperature

With this general context, above-normal temperatures could be expected over most of the domain, with a more robust signal over the Eastern Mediterranean, the Balkans and Northern Africa. Probabilities for the upper tercile were less robust over Morocco, Iberia, and parts of Western Mediterranean (Fig. 1a).

Precipitation

Precipitation forecasts showed a robust dry signal over the east of the MedCOF domain, and, with less probability, over parts of the Balkans and Central Mediterranean. Upwards motion over the Indian Ocean seemed to provide some likelihood of above-normal precipitation over the southeastern part of the domain. For most of North Africa, summer is a climatologically dry season, so a dry mask had been applied (Fig. 1b).

2 Analysis of the 2025 summer season

Analysis of the summer season temperature and precipitation anomalies and general circulation are based on maps and monthly or seasonal bulletins on the climate in the WMO Region RA I – NA and RA VI for the summer 2025 (WMO RA I RCC Node on Climate Monitoring: https://www.meteo.tn/en/climate-monitoring-watch; WMO RA VI RCC Offenbach Node on Climate Monitoring: http://www.dwd.de/rcc-cm), contributions from Météo France (http://seasonal.meteo.fr/), Regional Climate Outlook Forums for Southeastern Europe (SEECOF-34, http://www.seevccc.rs) and North Africa (PRESANORD, https://rcc.acmad.org/presanord.php), and national verification reports from MedCOF participants.

2.1 General circulation

2.1.1. Ocean

Sea surface temperatures (SST) in the central and eastern equatorial tropical Pacific were mostly around the 1991-2020 normal in boreal summer 2025, in the east slightly above, in some central parts slightly below (Fig. 2). The western tropical Pacific was warmer than normal. This implies that SST anomalies in that region showed mainly neutral ENSO conditions as forecasted by the MedCOF outlook.

Most of the entire Atlantic basin had above-normal temperatures in this period as forecasted, with exception of the eastern equatorial part and a region in the northern central parts south of Greenland, where temperatures were below normal. Particularly warm was the eastern North Atlantic close to the European continent with anomalies above +1 K.

The entire Mediterranean Sea area was warmer than normal with highest anomalies in the west close to the Spanish east coast (above +2 K) and lowest in the eastern basin (around +0.5 K). The Black Sea was 0.5 to 1 °C warmer than normal on summer average, warmest in the northeast.

The Indian Ocean had around-normal temperatures in the north, while the equatorial and southern parts were mostly warmer than normal. A slight west-east gradient can be seen in Fig. 2, implying a tendency to a negative IOD phase.

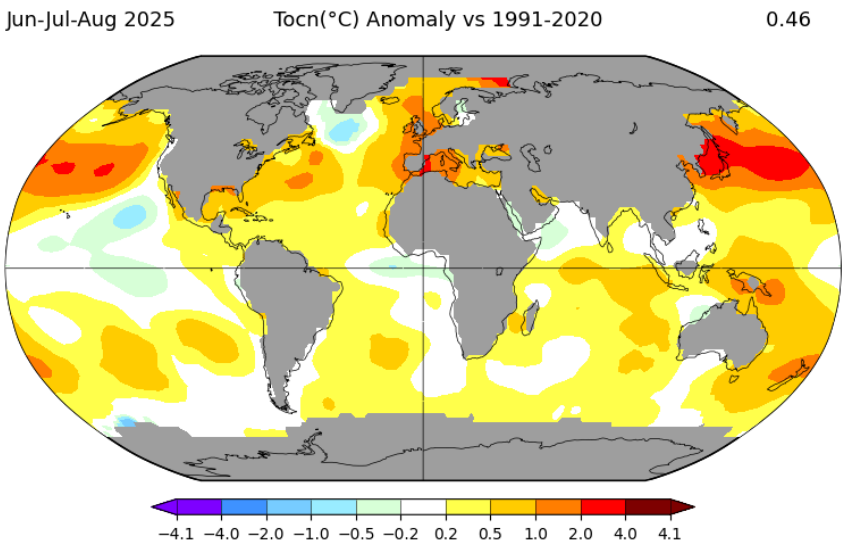


Figure 2: Sea surface temperature anomalies for boreal summer 2025 (June-August), 1991-2020 reference. Data from ERSSTv5 Ocean model analysis with 250km smoothing, source: NASA GISS, https://data.giss.nasa.gov/gistemp/maps/

Looking at the specific Niño regions (Tab. 1), SST was above normal (1971-2000 reference) throughout boreal summer 2025 in the easternmost regions Niño1+2, but close to normal in Niño3 and Niño4 regions in June and July 2025. August 2025 showed a tendency to La Niña (decreasing positive or change to negative values). In the combined region Niño3.4, which is often used as reference for El Niño / La Niña definition, August 2025 had an anomaly value of −0.33 °C, which was still weaker than the La Niña threshold of −0.5 °C. The Oceanic Niño Index (ONI) used by NOAA had a value of −0.2 °C for the JJA 2025 season, implying neutral conditions that time.

YR	MON	NINO1+2	ANOM	NINO3	ANOM	NINO4	ANOM	NINO3.4	ANOM
2025	6	23.79	0.61	26.63	-0.01	29.07	0.23	27.75	0.04
2025	7	22.29	0.46	25.92	0.04	28.84	0.05	27.24	-0.06
2025	8	21.09	0.23	24.97	-0.24	28.63	-0.06	26.58	-0.33

Table 1: Sea surface temperature and anomalies (in °C) for various Niño regions in boreal summer months 2025 (June-August), 1971-2000 reference. Data from ERSST.v5 ocean model analysis, source: NOAA, https://www.ncdc.noaa.gov/teleconnections/enso/sst with definitions of Niño regions, see also Fig. 3.

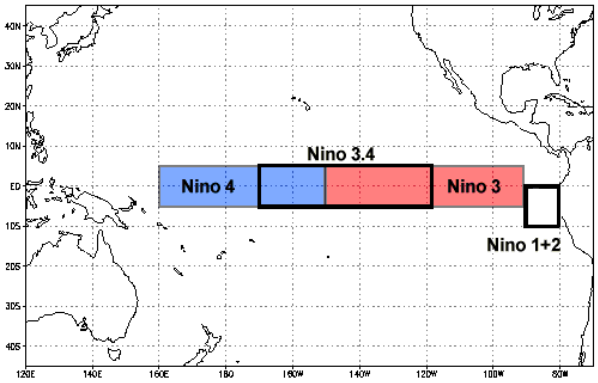


Figure 3: Niño regions. Source: NOAA NCEI, https://www.ncei.noaa.gov/access/monitoring/enso/sst

The Indian Ocean Dipole (IOD) index was neutral in June and July 2025 as forecasted. Only in August 2025, a development towards a negative IOD started (Fig. 4).

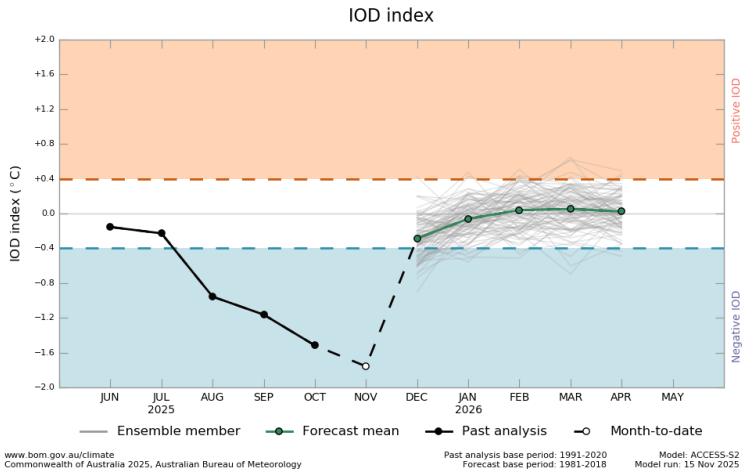


Figure 4: Monthly Indian Ocean Dipole (IOD) index. Source: Australian Government, Bureau of Meteorology (BOM), https://www.bom.gov.au/climate/ocean/outlooks/?index=iod#tabs=Graphs

2.1.2. Atmosphere

Seasonal anomalies of 500-hPa geopotential in summer 2025 (Fig. 5) showed a strong gradient over the North Atlantic, but anticyclonic anomalies over Western and Central Europe and the entire MedCOF region. Velocity potential anomalies in 200 hPa (Fig. 6) implied upward motion over the maritime continent and the Indian ocean, and downward motion over much of the Atlantic including western parts of the Mediterranean region. Over the tropical Pacific there was also at least a weak downward motion visible in eastern parts. All this was mainly in line with the MedCOF outlook.

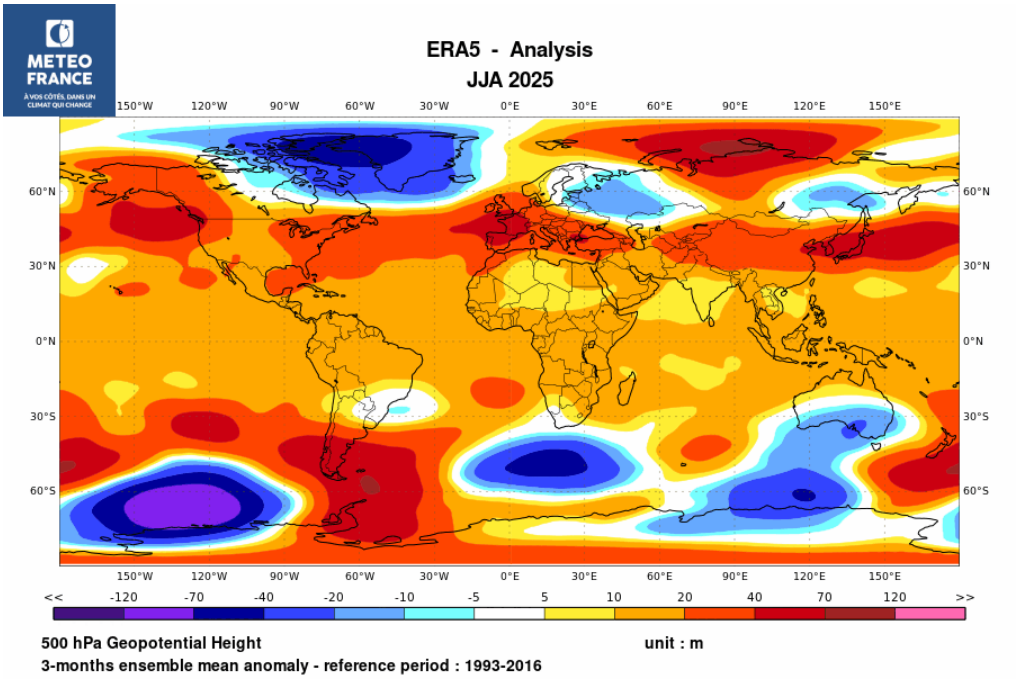


Figure 5: Seasonal anomalies of 500-hPa geopotential for boreal summer 2025 (1993-2016 reference). Source: Météo France, data source: ERA5, http://seasonal.meteo.fr/content/suivi-clim-cartes-ref93-16?language=en

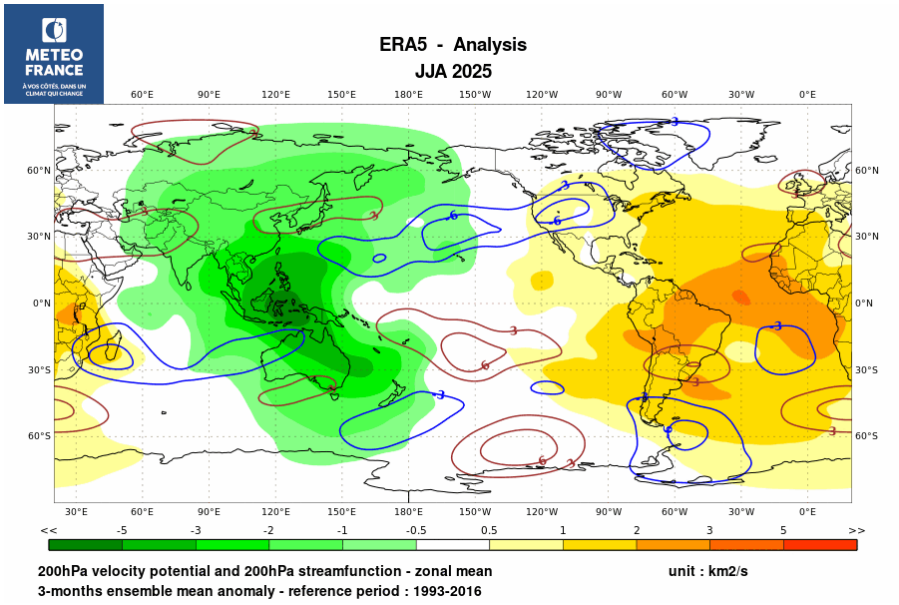


Figure 6: Seasonal anomalies of 200-hPa velocity potential (colour shades in green: upward motion, brown: downward motion) and stream function anomalies (isolines in red: anticyclonic, blue: cyclonic, each in the northern hemisphere) for boreal summer 2025 (1993-2016 reference). Source: Météo France, data source: ERA5, http://seasonal.meteo.fr/content/suivi-clim-cartes-ref93-16?language=en

Sea level pressure (SLP) anomalies (Fig. 7) showed again a strong gradient over the North Atlantic on summer 2025 average, and mainly anticyclonic anomalies over much of the MedCOF region, except for an area over the eastern Mediterranean and northern parts of the Ukraine.

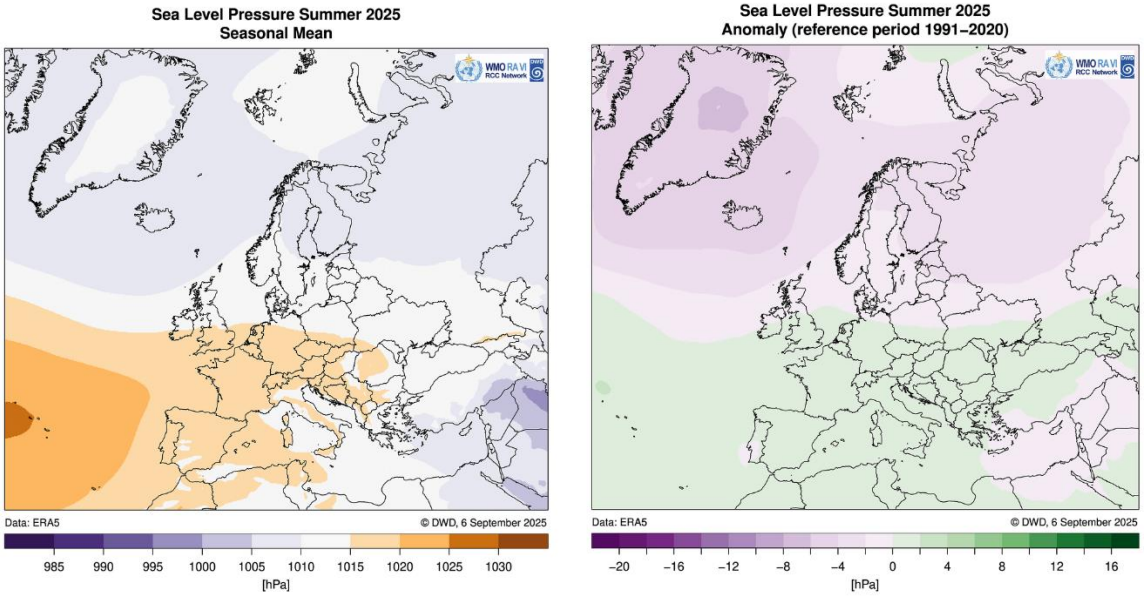


Figure 7: Seasonal mean sea level pressure and anomalies for summer 2025 (1991-2020 reference). Source: Deutscher Wetterdienst (DWD), data source: ERA5. https://www.dwd.de/EN/ourservices/rcccm/int/rcccm_int_ppp.html

According to the Météo France weather type classification, the zonal Atlantic Ridge type was by far the most frequent one in summer 2025 with more than twice the normal number of days (Fig. 8), the same as in the preceding summer 2024. This reflects mainly the summer NAO+ type. This was particularly outstanding for the months of June and July, while in August the number of that type was only slightly above normal, and smaller than the number of Atlantic Low types.

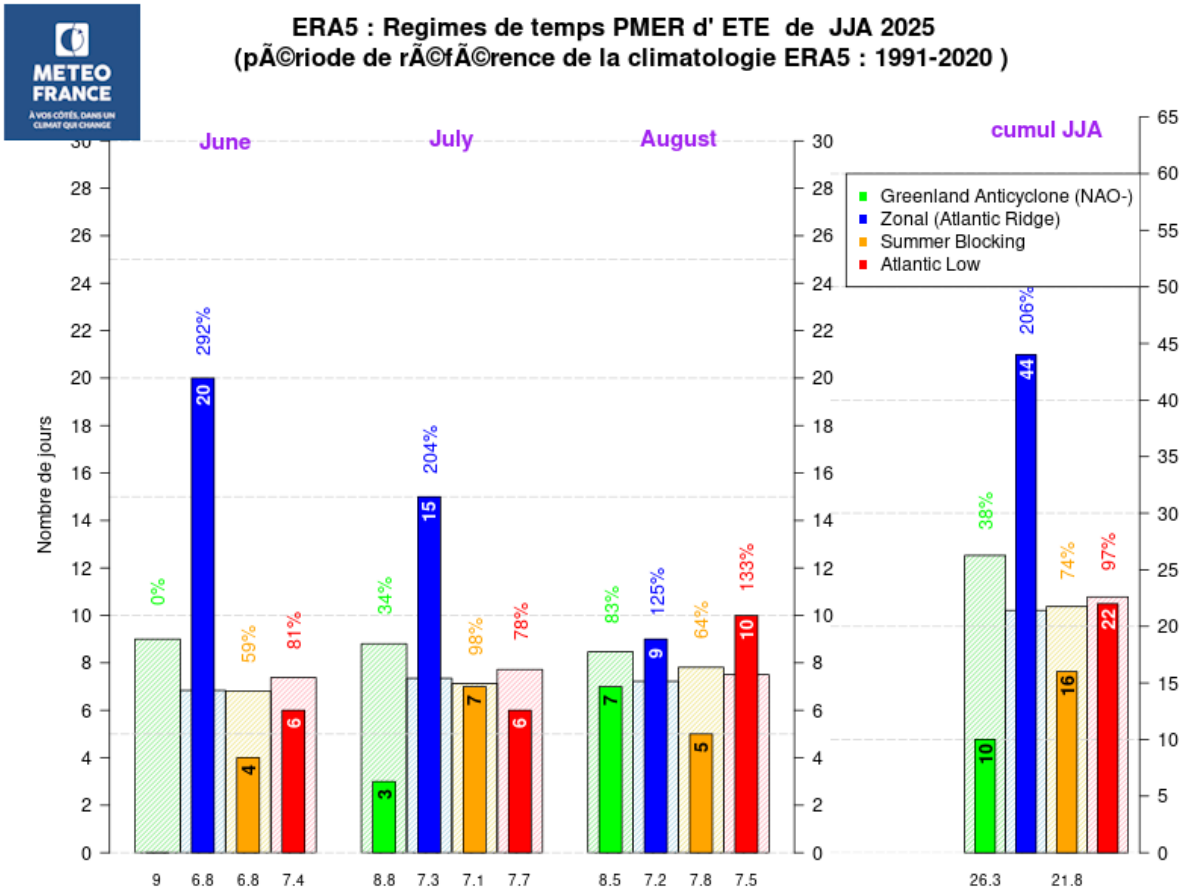


Figure 8: Number of days with circulation types of the Météo France classification for each month of the summer 2025 season and for the whole season (right), and in percent of the climatological frequency distribution 1991-2020. Source: Météo France, http://seasonal.meteo.fr/content/suivi-clim-regimes-trim?language=en

The NOAA CPC classification shows that there were contributions of various circulation patterns relevant for the MedCOF domain the during the season, which were different from month to month. Over the North Atlantic, NAO+ and EA+ patterns could be identified, which were in line with the strong gradient. However, NAO+ weakened considerably from June to August 2025. The East Atlantic – West Russia pattern was (EA/WR) was negative throughout the season and reflected the low-pressure area over western Russia. It was most intense in June and weakest in July.

yyyy	mm	NAO	EA	WP	EP/NP	PNA	EA/WR	SCA	TNH	POL	PT	Ex.V
2025	6	1.01	1.70	1.27	0.97	-1.07	-1.86	-2.20	-99.90	0.17	-99.90	89.6
2025	7	0.51	1.83	-0.58	0.44	0.27	-0.22	1.11	-99.90	0.74	-99.90	73.9
2025	8	0.21	1.71	-0.31	-2.22	-0.39	-1.36	-1.60	-99.90	-2.64	-0.30	65.0

Table 2: Circulation indices of NOAA CPC patterns for the boreal summer months 2024. ExV = explained variance in %.
https://ftp.cpc.ncep.noaa.gov/wd52dg/data/indices/tele_index.nh

2.2 Temperature

Europe and Middle East (RA VI)

Summer 2025 was warmer than normal in almost the entire domain compared to the 1991-2020 normal, except for some northernmost parts of the Ukraine. Most of the domain was 1–2 °C warmer than normal, some areas 2-3 °C.

Seasonal mean temperatures in the lowlands ranged from around 19 °C in north-western Ukraine to around 33 °C in eastern Syria.

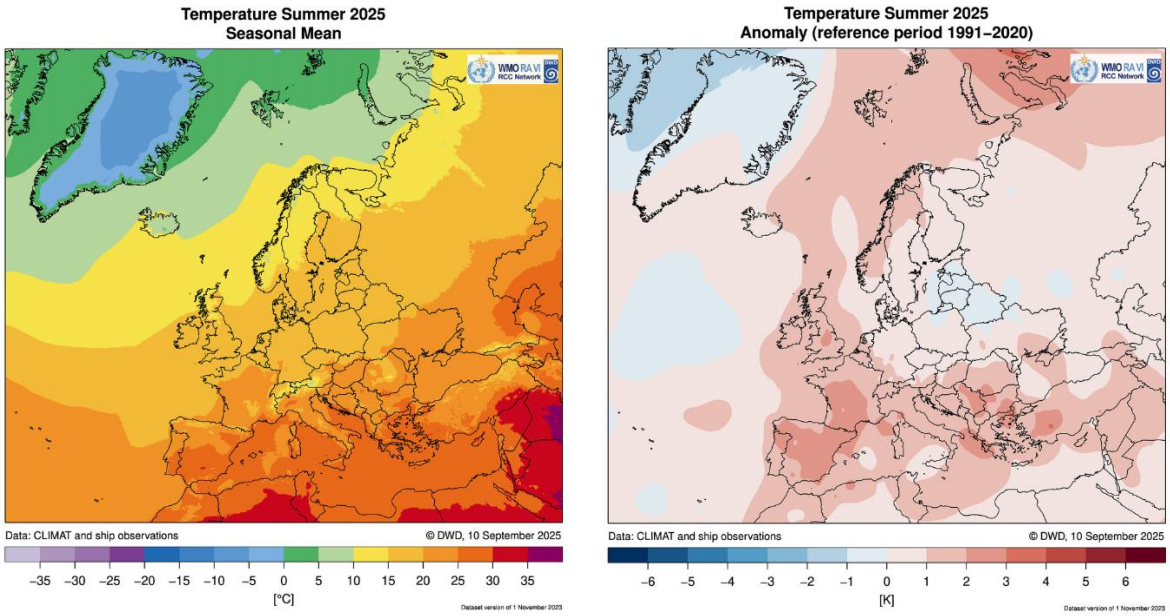


Figure 9: Surface air temperature for summer 2025. Left: seasonal mean, right: anomalies, 1991-2020 reference, source of both maps: WMO RAVI RCC, based on interpolated CLIMAT data, www.dwd.de/rcc-cm

In terms of terciles, when referring to the ERA5 reanalysis and the 1991-2020 reference, temperatures were in the upper tercile range in almost the entire domain, except for the northern half of Ukraine, which was in the middle tercile range (Fig. 10-11). According to E-OBS and ECAD data, a small number of places in various parts of the domain might also have had seasonal temperatures in the middle or even the lower tercile range.

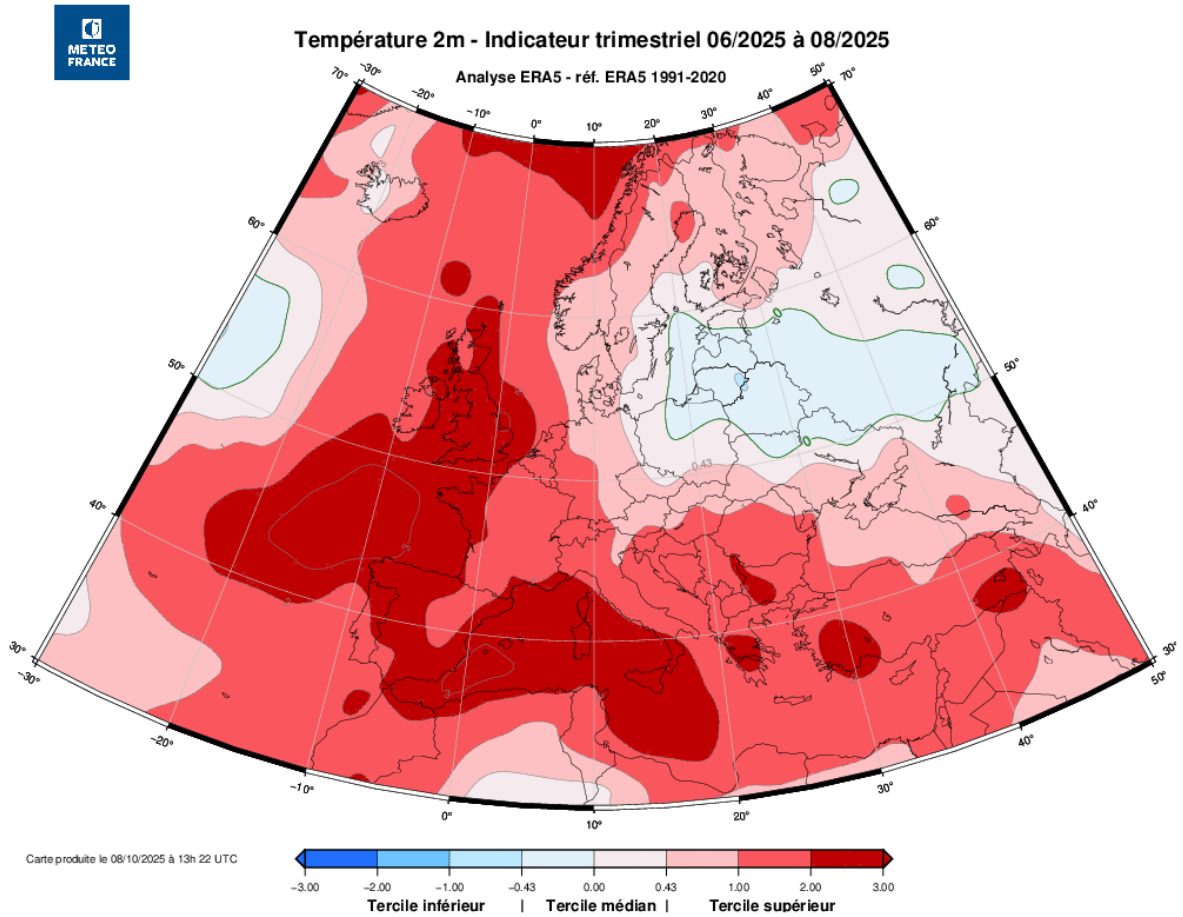
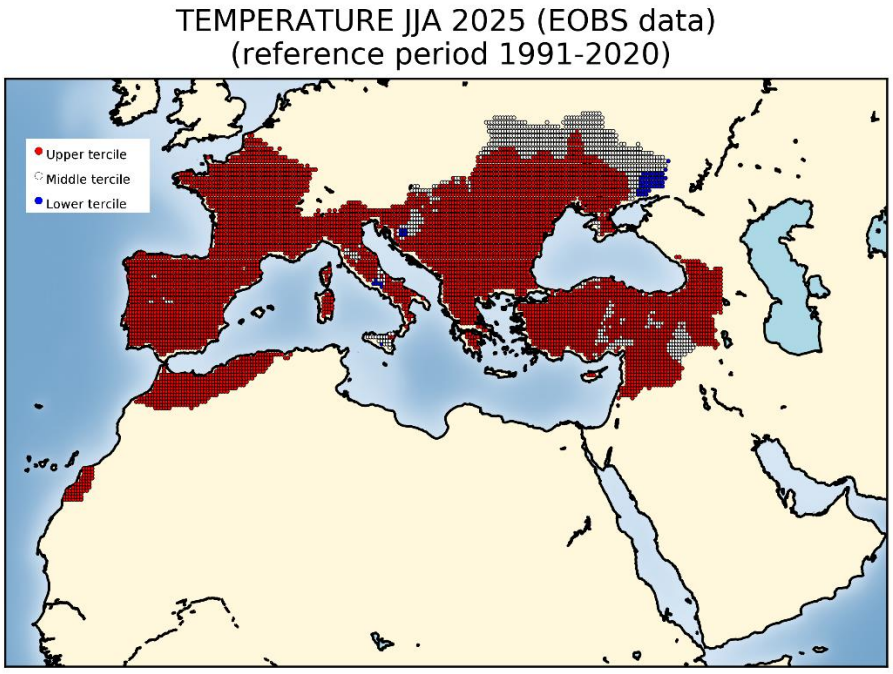


Figure 10: Seasonal normalized temperature anomalies of summer 2025 surface air temperature based on ERA5 reanalysis data, 1991-2020 reference. The data range between -0.43 and +0.43 represents the middle tercile range, below -0.43 the lower tercile range and above +0.43 the upper tercile range. Source: Météo France, http://seasonal.meteo.fr/content/suivi-clim-cartes-ERA5



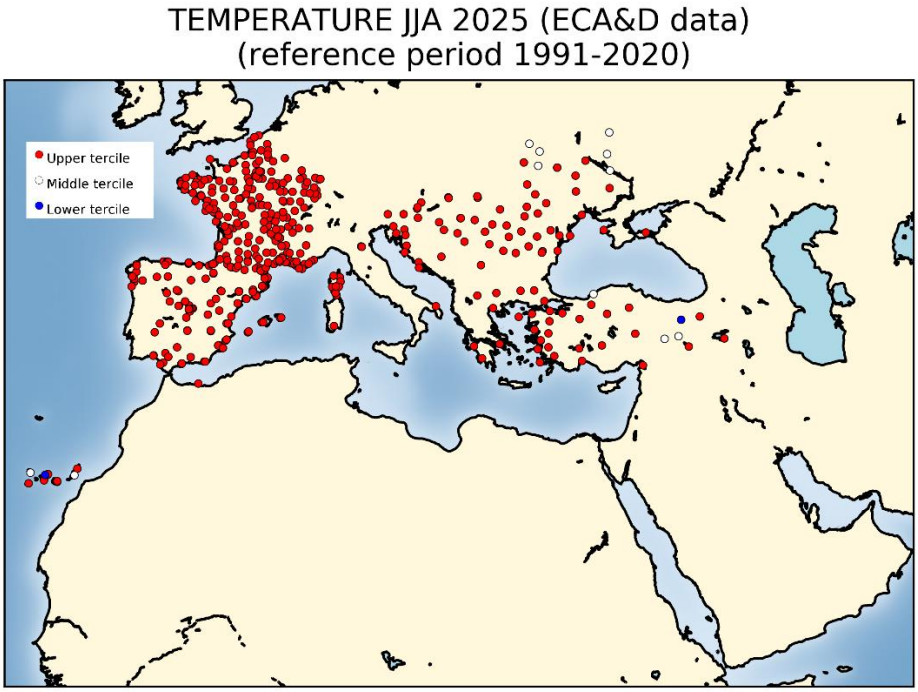


Figure 11: Terciles of summer 2025 surface air temperature based on interpolated E-OBS grid data (upper graph) and individual ECA&D station data (lower graph), 1991-2020 reference. Note: E-OBS uses a higher number of stations than those which are freely available at ECA&D. Source: AEMET, data source: http://www.ecad.eu/

North Africa (RA I)

Seasonally averaged temperatures ranged from 18 °C to 26 °C in the northernmost areas of the region, particularly along the Mediterranean coastlines and in the elevated terrains of northern Morocco, northern Algeria, and northern Tunisia. In contrast, the inland regions experienced significantly warmer temperatures, ranging from 30 °C to 38 °C, specially noted in central Algeria, southern Tunisia, and northern Libya. The hottest areas, where average temperatures surpassed 40 °C, were primarily located in the central-western and central-eastern regions of Algeria, as illustrated by the deep red sections on the map (Fig. 12)

Almost the whole domain experienced above-normal temperatures during summer 2025 compared to the 1991-2020 climatological baseline (Fig. 13). The strongest positive anomalies, reaching between +2 °C and +3 °C, were observed locally over the northern parts of Algeria. Elsewhere over northern Algeria as well as Morocco and Tunisia moderate positive anomalies were recorded ranging from +1 °C to +2 °C, indicating generally warmer-than-normal conditions across the North Africa domain. In contrast, western Libya and southern Egypt as well as Morocco experienced slightly below-normal temperatures with anomalies close to -1 °C, suggesting locally cooler conditions relative to the reference period (1991-2020).

In Tunisia, temperatures remained above normal throughout the season, with most regions affected by intense and persistent heat. The national average temperature reached 28.8 °C, exceeding the 1991-2020 reference normal by 1.2 °C indicating a notably warm summer across the country.
Maximum temperatures were consistently high in all regions, ranging from 30 °C in Mahdia located along the eastern coast, to 40.4 °C in Tozeur, situated in the southwest.
Minimum temperature were also high in all Tunisia ranging from 18.4 °C in EL Kef, situated in the Highlands of north-western Tunisia and 27.4 °C in Tozeur.

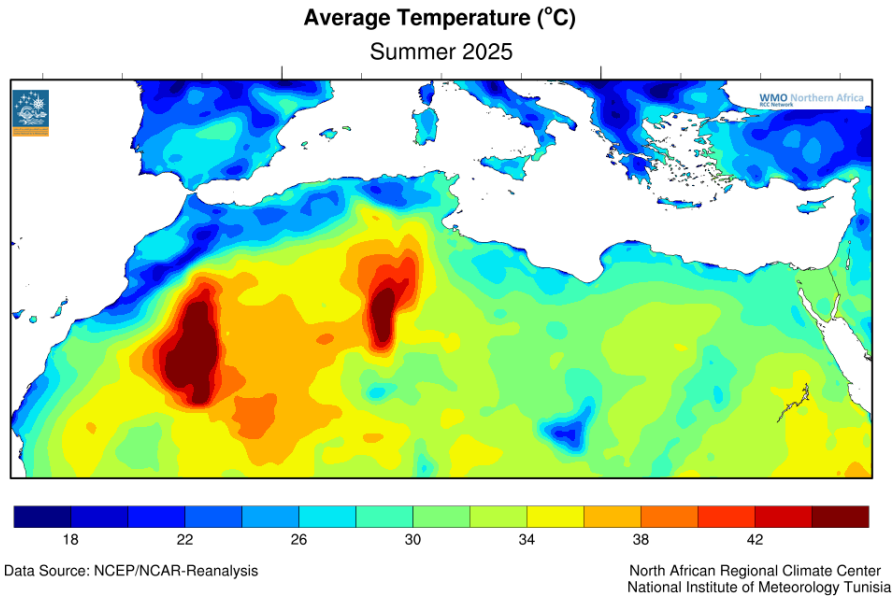


Figure 12: Mean temperature for summer season 2025 in North Africa (in °C). Source: INM, (Data from NCEP/NCAR reanalysis, http://www.esrl.noaa.gov)

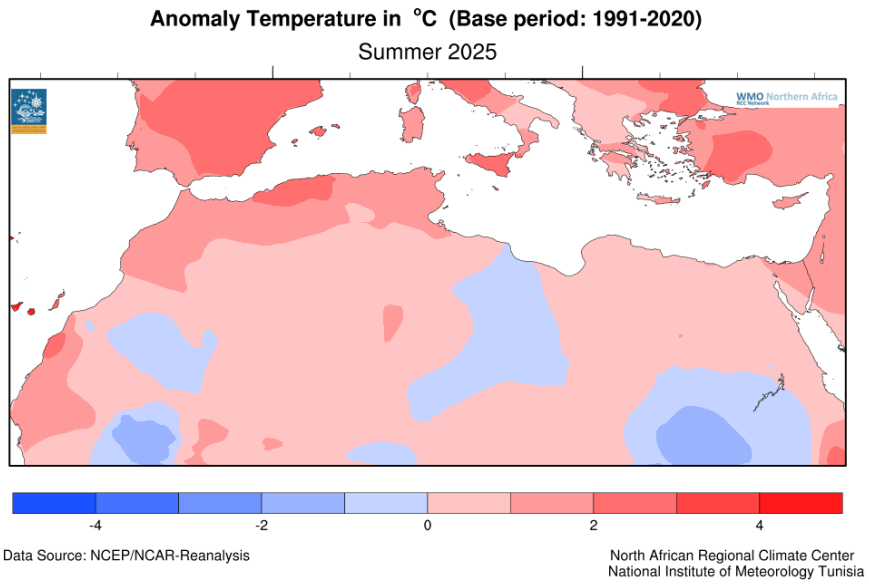


Figure 13: Temperature anomaly for summer season 2025 in North Africa (in °C), reference period 1991-2020. Source: INM, Data from NCEP/NCAR reanalysis, http://www.esrl.noaa.gov

Analysis of terciles indicates that temperatures were generally in the upper tercile range throughout most of the North African region (Fig. 14). Exceptions were observed in some areas in the west of Libya and the south of Egypt, where temperatures mainly corresponded to the lower or middle tercile range.

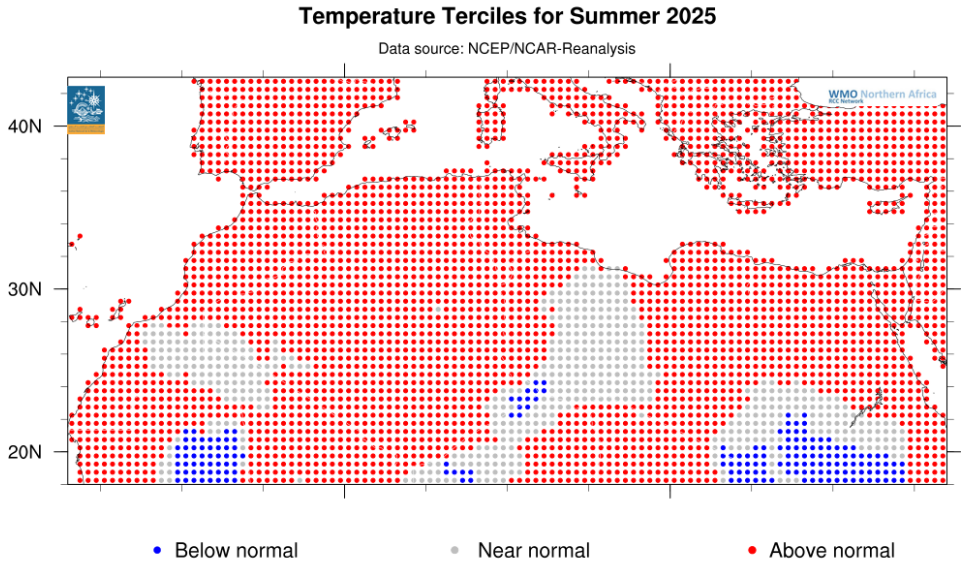


Figure 14: Tercile distribution for temperature of JJA 2025, reference period 1991-2020. Source: INM, Data from NCEP/NCAR reanalysis, http://www.esrl.noaa.gov

2.3 Precipitation

Europe and Middle East (RA VI)

Summer precipitation in 2025 was below normal over most of the domain (Fig. 15). Especially the western Iberian Peninsula, much of the Balkan Peninsula, areas around the Black Sea, Türkiye and the Middle East received less than 60% of the normal precipitation, some parts even below 20%. However, there were also some areas with above-normal precipitation, mainly in north-eastern Spain, northern and eastern France, northern and central Italy, locally at the Dalmatian coast and in the Middle East, and in northern Ukraine. Especially in Italy and Ukraine, several places received more than 125% of precipitation.

In terms of absolute anomalies, particularly large areas on the Balkan Peninsula and around the Black Sea had seasonal deficits of more than 90 mm (30 mm per month). Positive anomalies of more than +30 mm were recorded in places in Italy and northern Ukraine.

Seasonal totals ranged from zero in the Middle East, southeastern Türkiye, and places in southern Portugal and southern Spain to above 300 mm in the Alpine region and at the coasts of western Georgia.

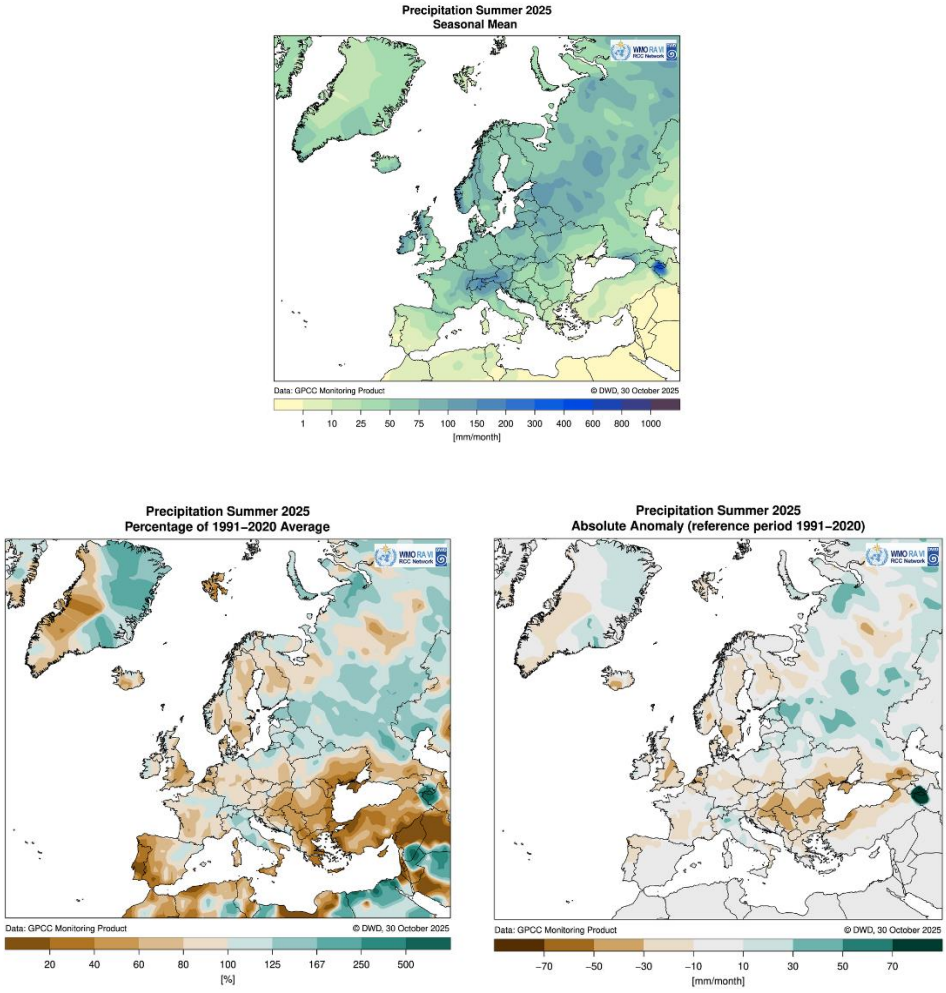


Figure 15: Precipitation for summer 2025 in Europe. Upper map: seasonal total in mm/month, lower maps: percentage of 1991-2020 average and absolute anomalies, source: WMO RAVI RCC, www.dwd.de/rcc-cm , data source: GPCC, http://gpcc.dwd.de

In terms of percentiles, precipitation was in the lower tercile range especially in areas around the Black Sea, which include mainly the Balkan Peninsula, most of the southern Ukraine and Moldova, the South Caucasus and most of Türkiye (Fig. 16–17). Also in the lower percentile range was the north-western Iberian Peninsula and southwestern France. In contrary, much of northern and central Italy had precipitation in the upper tercile range. The other areas saw precipitation mostly in the middle tercile range, partly in the lower range, locally the upper range.

The results of the different datasets GPCC, E-OBS and ECA&D are quite similar to each other, except for local discrepancies due to different station coverage.

A more detailed analysis for south-eastern Europe, including high impact events, is given in the analysis and verification report of the SEECOF-33 CLIMATE OUTLOOK for the 2025 summer season for southeast Europe (SEE), provided by SEECOF-34:

http://www.seevccc.rs/SEECOF/SEECOF-34/STEP-1/Draft-Version-Final-assessment-of-SEECOF-33-climate-outlook-for-summer2025-season.pdf

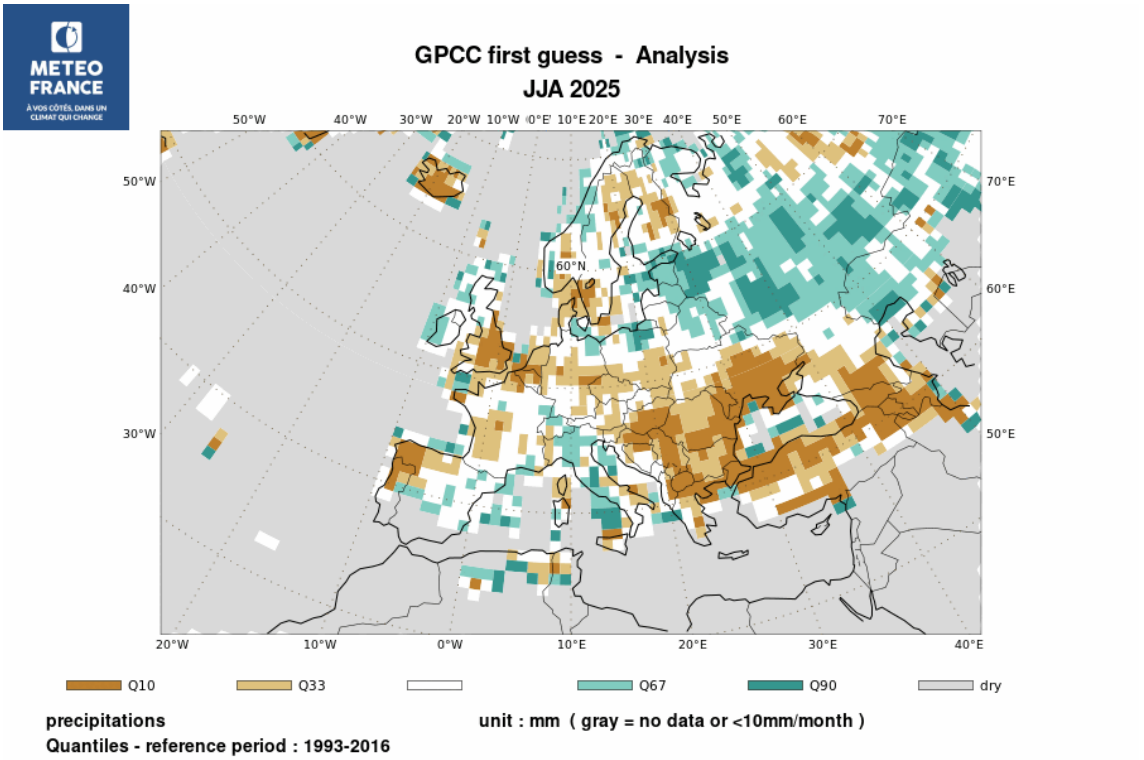
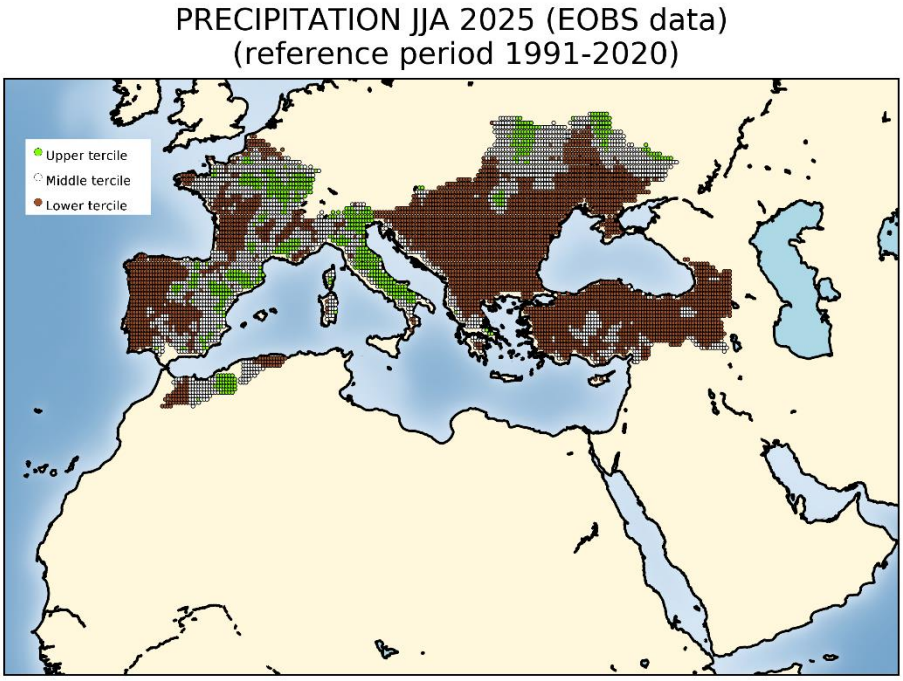


Figure 16: Tercile ranges of summer 2025 precipitation based on GPCC grid data, 1993-2016 reference. Source: Meteo France, http://seasonal.meteo.fr/content/suivi-clim-cartes-ref93-16



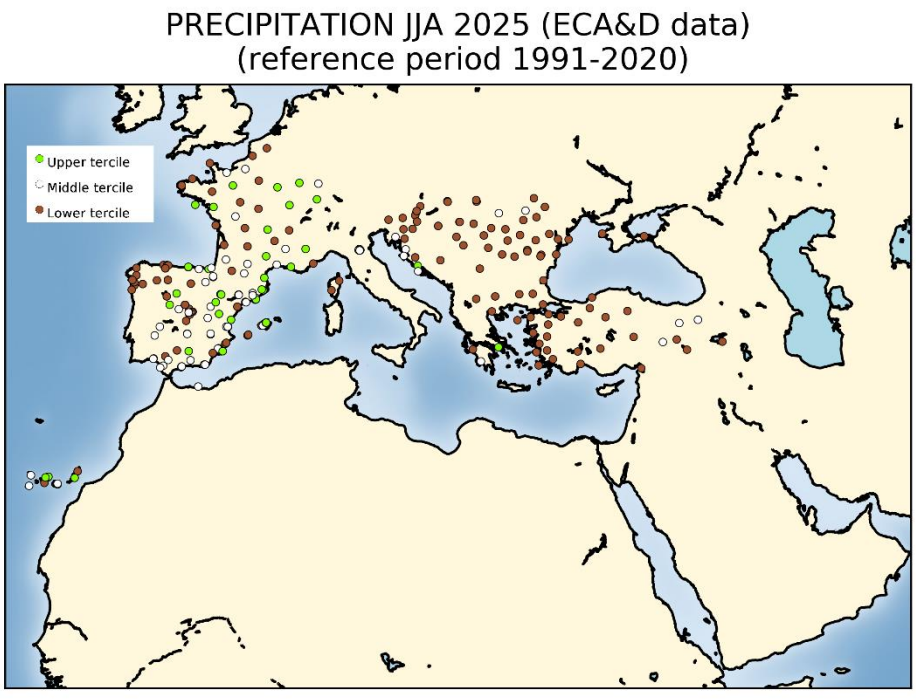


Figure 17: Tercile ranges of summer 2025 precipitation based on interpolated E-OBS grid data (upper graph) and individual ECA&D station data (lower graph), 1991-2020 reference. Source: AEMET, data source: http://www.ecad.eu/

North Africa (RA I)

Overall, summer 2025 has been very dry in terms of rainfall, the accumulated precipitation did not exceed 20 mm over the most parts of the North African countries, except locally the north-east of Algeria, the north-west of Tunisia and the center of Morocco where precipitation was between 20 mm and 60 mm (Fig. 18).

Seasonal precipitation was characterized by positive anomalies locally in south of Algeria and the south east of Egypt. It was drier than normal mostly over Tunisia, the south of Morocco, the east of Libya and northern and western parts of Algeria. Elsewhere, seasonal precipitation was normal to slightly above normal compared to the long-term average (Fig. 19).

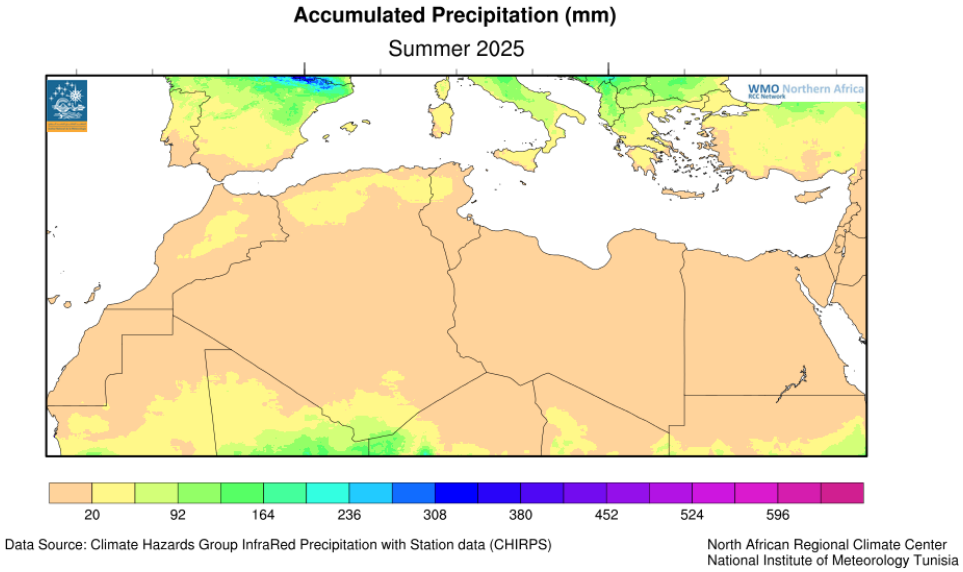


Figure 18: Total precipitation for summer season 2025 in North Africa (in mm). Source: INM, Data from CHIRPS: ftp://ftp.chc.ucsb.edu/

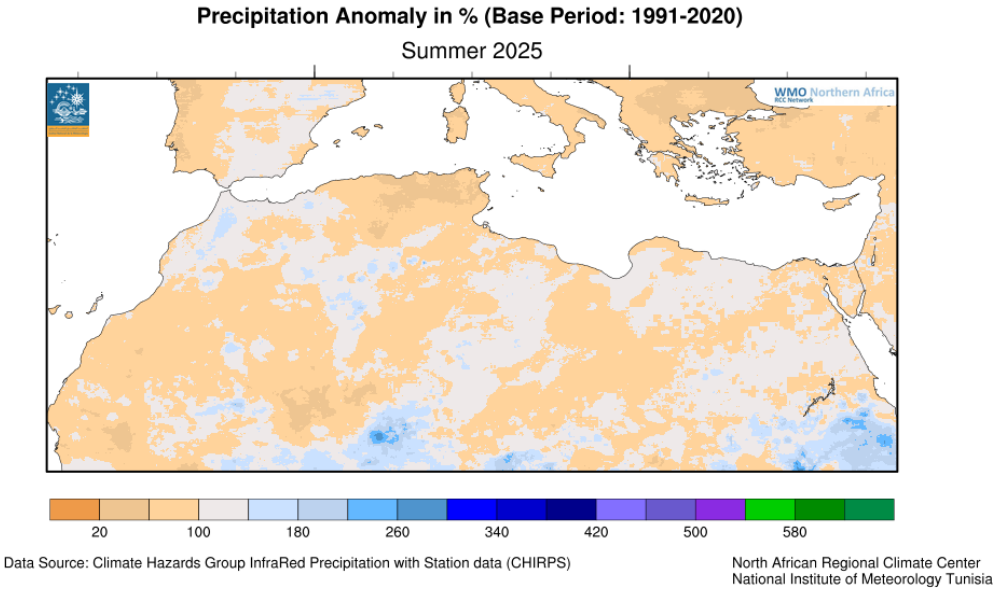


Figure 19: Precipitation anomaly for the summer season 2025 in North Africa (in %) (Reference period 1991-2020). Source: INM, Data from CHIRPS: ftp://ftp.chc.ucsb.edu/

3 Verification of the MedCOF-24 climate outlook for the 2025 summer season

3.1 Temperature

Europe/RA VI

The MedCOF-24 outlook favoured the upper tercile range for the entire domain, with 70% probability for southern Italy, the southern half of the Balkan Peninsula, and the eastern Mediterranean region, and 50% for the other parts of the domain.

The outlook was correct for almost the entire domain, except for northern Ukraine, where temperatures were mainly in the middle tercile range.

North Africa (RAI)

The MedCOF-24 climate outlook for the summer 2025 season favored the upper tercile range over the entire North African domain (10%, 20%, 70%).

The outlook of temperature was correct over most of the domain, except the south of Egypt, the west of Libya, and the south of Morocco, where temperature was in the normal or below-normal tercile range.

3.2 Precipitation

Europe/RA VI

The MedCOF-24 outlook favoured a dry scenario (lower tercile range) over large eastern parts of the domain, which include the southern and eastern Balkan Peninsula, Moldova, Ukraine, South Caucasus and Türkiye. Elsewhere in the domain, no privileged scenario was given.

The outlook was mainly correct for the domain. Precipitation was in fact in the lower percentile range in that large area around the Black Sea, whereas there were no large areas with any privileged tercile range in the other parts of the domain. Smaller areas, however, show some differences from the large-scale pattern, like north-western parts of the Iberian Peninsula (lower tercile range) or northern and central Italy (upper tercile range).

North Africa

A dry mask was applied over most of North Africa, while above-normal precipitation (upper tercile) was forecasted for the southeastern part of Egypt. In fact, precipitation was below to near normal over most parts of the North African domain, and with positive anomalies over the southeast of Egypt and the extreme south of Algeria.

The MedCOF-25 outlook was able to forecast precipitation for the summer season 2025 for the North African domain.

4. Users’ perceptions of the MedCOF-24 outlook

Europe/RA VI

From some countries, the following information was given:

- Israel: The NMHS has provided a summer outlook.
- Slovenia: The meteorological Service at the Slovenian Environment Agency currently doesn't provide a seasonal outlook for the country.

North Africa

- Ministry of Agriculture, Water Resources and Fisheries (Tunisia).

Appendix A: Contributors to verification of MEDCOF-24

- World Meteorological Organization as initiator and supporter of this activity

Europe and Middle East (RA VI)

- **Climate Centres:**

- WMO RA VI RCC Offenbach Node on Climate Monitoring, Deutscher Wetterdienst, Germany
- South East European Virtual Climate Change Center hosted by Republic Hydrometeorological Service of Serbia, Republic of Serbia

- **National Meteorological and Hydrological Services:**

- Météo France, Republic of France
- Deutscher Wetterdienst, Federal Republic of Germany
- AEMET, Spain

- **Further National Meteorological and Hydrological Services via SEECOF-34:**

- Hydrometeorology and Monitoring Center, Armenia
- Federal Hydrometeorological Institute, Federation of Bosnia and Herzegovina
- Republic Hydrometeorological Service, Republika Srpska, Bosnia and Herzegovina
- National Institute of Meteorology and Hydrology, Bulgaria
- Meteorological and Hydrological Service of Croatia, Republic of Croatia
- Cyprus Department of Meteorology (DoM)
- National Environmental Agency (NEA), Georgia
- Hellenic National Meteorological Service, Greece
- Israel Meteorological Service
- State Hydrometeorological Service, Republic of Moldova
- Hydrometeorological Service of Republic of North Macedonia
- Republic Hydrometeorological Service of Serbia, Republic of Serbia
- Slovenian Environment Agency, Slovenia
- Turkish State Meteorological Service, Republic of Türkiye
- Ukrainian Hydrometeorological Center, Ukraine

North Africa (RA I)

- WMO RA I North African RCC Tunisia Node on Climate Monitoring, National Institute on Meteorology, Tunisia

APPENDIX B: **Analysis and verification of the MedCOF-22 climate outlook for the summer season 2024:**

Europe/RA VI

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Albania *	Above normal	Above normal (10,20,70)	North: below normal South: around normal	Below normal (50,30,20)	
Armenia (1991-2020)	Above normal	Above normal (20,30,50)	Below normal	Below normal (50,30,20)	- Tenth warmest summer since 1935. The highest positive temperature anomaly was observed in August when mean monthly temperature was 1.9 °C above the norm. - August was especially dry, when monthly precipitation consisted only 19% of the norm.
Azerbaijan *	Above normal	Above normal (20,30,50)	Below normal	Below normal (50,30,20)	
Federation of Bosnia and Herzegovina (1991-2020)	Above normal in almost the entire country	Above normal (20,30,50)	Within and below normal	No privileged scenario (33,33,33)	At most meteorological stations, June 2025 was the warmest since the beginning of official measurements in Bosnia and Herzegovina. At the meteorological stations Sarajevo and Tuzla, a new absolute maximum for the month of June was recorded. In Sarajevo, 38.0 degrees were measured, and in Tuzla 37.2 degrees. June was an extremely dry month. At a large number of stations, no precipitation was recorded during the month. At other meteorological stations, the measured precipitation amounts were the lowest in June since the beginning of official measurements.

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Rep. Srpska, Bosnia and Herzegovina (1991-2020)	Above normal	Above normal (20,30,50)	Below normal over most places (normal in southern)	No privileged scenario (33,33,33)	Wild fires occurred at the Southern area (Eastern Herzegovina) during very hot and dry periods.

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Bulgaria (1991-2020)	Above normal	Above normal (10,20,70)	Below normal	Below normal (50,30,20)	The summer of 2025 is one of the driest summers in Bulgaria since 1950, similar to the summers of 2000 and 2012. Seasonal precipitation amounts are below the climatic norm – between 7 and 74% of it. June 2025 is the driest June since 1950. During the periods from June 30 to July 9 and from July 19 to 29, the entire country was engulfed in a heat wave. High temperatures, a prolonged period of no rain, and human negligence caused dozens of fires to rage in various parts of the country. With the passage of atmospheric disturbances on 7 and 28 July thunderstorms, intense rainfall of rain and hail, and strong winds were registered. In towns, streets were flooded, roofs and fences were damaged, power poles were broken and trees were uprooted, and sections of the road network were temporarily blocked. The country experienced another heat wave from August 3 to 17. In the first half of the month, large fires engulfed forest and field areas in the municipalities of in the east part of the country. On August 22, intense rainfall accompanied by strong winds caused local flooding, felled trees, and damaged the power grid and infrastructure in the northern parts of the country. The hot and dry weather called into question the survival of some spring crops grown under non-irrigated conditions. As a result, of below-normal rainfall towards the end of the month, productive soil moisture reserves were completely depleted in many of the country's agricultural regions. With the deepening moisture deficit, a large part of the sunflower grown under non-irrigated conditions has a severely impaired turgor, with small, poorly decorated cotyledons. In corn crops, yellowing and drying of the leaves on the lower floors of the plants is observed. As a result of unfavourable agrometeorological conditions, damage to agricultural crops is increasing - leaf scorch on corn and sunflower, sterility in late production vegetable crops, premature leaf fall in some perennial crops. In the first half of August, the deepening summer drought and extremely high temperatures compromised the corn and sunflower harvest in many places in the country. Sunflower yields are unusually low, in places - below 100 kg/hectare, and a significant part of the corn crops grown under non-irrigated conditions will not be harvested.

Croatia (1991-2020)	Above normal	Above normal (20,30,50)	Normal and below normal (most of Croatia)	No privileged scenario (33,33,33)	In all three months heat waves were observed – one per month (most pronounced at the end of June and in August, longer lasting at the coast). In all three months convective related severe weather phenomena (thunderstorms, hail, heavy rains, flash floods, waterspouts) were observed mostly all over Croatia. In June, severe thunderstorms accompanied with rain, hail and very strong wind hit Istria on June 16, especially Rovinj. Damage from falling trees was recorded in Auto camps and 7 people were injured. Due to the strong wind, there were some stranded boats. On June 27 severe thunderstorm hit continental part of Croatia - damage on corps due to hail were reported. In July convective activity was very frequent all over Croatia. From July 6th to 8th, the area of several counties was affected by severe thunderstorms accompanied by gale-force winds, heavy rain and hail. There was a lot of material damage from fallen trees and hail on roofs and facades. In Split, on July 8, there was extensive damage to the Marjan Forest Park, where almost 4,000 trees were felled, and the damage is estimated at 3 to 5 million euros. A few dozen people were injured, two seriously. In the port, due to the breaking of the rope with which the ferry was tied, it caused damage to other ships, fortunately only material damage. There were also severe storms that affected a larger area towards the end of the month (July 26 and 27). Material damage was recorded due to stormy winds, flash floods and hail, and there were interruptions in the electricity supply in the continental part of Croatia and in the northern and central Adriatic. In Poreč (Istria), more than 50 mm of rain fell in a short time, causing flash floods. There were no injuries. August - There were severe thunderstorms in August, but fewer than in July. At the end of the month (August 29th and 30th), a thunderstorm hit the Adriatic coast and areas along the Adriatic, especially the south, with gale-force winds and heavy rain. There were floods and landslides in the south, causing traffic disruptions. The daily precipitation amount at the Zavižan (highest mountain station) was 78 mm.

Cyprus (1981-2010)	Above normal	Above normal (10,20,70)	Below normal	No privileged scenario (33,33,33)	June: In relation to the recorded average daily maximum temperature, this was above normal. Extreme maximum temperatures were recorded with positive deviations well beyond 4 °C, such as at the Polis Chrysochous and Prodromos stations with extreme maximum daily temperatures of 39 °C and 32.5 °C, respectively, which were 8.7 °C and 7.5 °C above the normal maximum temperature of each station, respectively. Extreme minimum temperatures with positive deviations were also recorded, such as at the Athalassa station where the minimum temperature (26.4 °C) was 7.2 °C above normal and in Larnaca where the minimum temperature (25.5 °C) was 6.1 °C above normal. The accumulated precipitation was a result of local rain showers and thunderstorms during the days 1-3, 15- 16, 22 and 29 of June. Hail was reported for the 4th and 15th of June. For the days from 25-29 of June EMMA yellow warnings were issued, concerning extreme high temperature. July: The mean maximum and minimum temperatures were above normal in all of the selected stations. Daily maximum temperatures above normal (deviating by 4 °C or more from normal) were recorded, such as at the mountain station at the Forestry College in Prodromos and at Athalassa, where the extreme maximums (35.5 °C) and (44.7 °C), respectively, were 7.6 °C above normal for both areas. Extreme high minimums (more than at least 4 °C above normal for each station) were also recorded, such as in Polis Chrysochous and Athalassa, where the minimum (27.6 °C) and (28.7 °C) respectively, were 6.5 °C and 6.6 °C above normal for the two stations respectively. During July, extremely high temperature EMMA warnings, have been issued at both the yellow and the orange risk level, for both the maximum and the minimum temperatures. Specifically, a total of 13 EMMA warnings for extremely high temperatures were issued; 8 of which were at the yellow risk level during the periods 7-11, 21-22 and 28 of July, while 5 of them were at the orange risk level during the period 23-27 of July. From the distribution of the accumulated precipitation of July, as shown in the provisional chart that follows, the surface distribution reached 0.2 mm or 8% of normal, something that shows the uncertainty of the seasonal forecast model which must always be considered with a reserve.

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
					During the periods 2, 16, 17 and 21 of July local showers and isolated thunderstorms were reported. August: Extreme maximum temperatures were recorded with positive deviations of more than 4 °C, such as at the station at Achna, where the extreme maximum (45.2 °C) was 11.7°C above normal (33.5 °C) and at the station at Prodromos, where the extreme maximum (38 °C) was 10 °C above normal (28 °C). Extreme minimum temperatures with positive deviations of more than 4 °C were also recorded, such as at the station at Larnaca Airport, where the extreme minimum (30.4 °C) was 8.1 °C above normal, and at the station at Prodromos, where the extreme minimum (26.1 °C) was 8 °C above normal. For the periods 9-15 and 21-23 of August EMMA yellow warnings were issued, concerning high temperatures. EMMA warnings at the orange level were issued on August 9-12, regarding high temperatures. In addition, EMMA warnings at the red level were issued on August 13 and 14, regarding extremely high temperatures. From the distribution of the accumulated precipitation of August, the surface distribution reached only 0.1 mm or 6% of normal, something that shows us the uncertainty of the seasonal forecast model which must always be considered with a reserve. During the period of 25-27 of August local showers accompanied sometimes with thunderstorms were recorded, while no hail was reported during August.
France (1991-2020)	Above normal	Above normal (20,30,50)	Normal, Except west and north (below normal)	No privileged scenario (33,33,33)	

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Georgia (1991-2020)	Above and near normal	Above normal (20,30,50)	Below normal	Below normal (50,30,20)	No high impact events
Greece (1991-2020)	Above normal	Above normal (10,20,70)	Below or near normal	Below normal (50,30,20)	A strong heatwave gripped Greece from July 20-27, 2025, with temperatures soaring past 42 °C in many regions and reaching as high as 44 °C.
Hungary*	Above normal	Above normal (20,30,50)	Below normal	No privileged scenario (33,33,33)	
Israel (1991-2020)	Above normal	Above normal (10,20,70)	Seasonally dry	No privileged scenario (33,33,33)	No high impact events
Italy*	Above normal	Above normal South: (10,20,70) North, central: (20,30,50)	North: above normal South: normal or below normal	No privileged scenario (33,33,33)	
Jordan*	Above normal	Above normal (10,20,70)	Seasonally dry	No privileged scenario (33,33,33)	
Lebanon *	Above normal	Above normal (10,20,70)	Seasonally dry	No privileged scenario (33,33,33)	

Country (reference period)	Seasonal temperature (JJA)		Seasonal precipitation (JJA)		High Impact Events
	Observed	MedCOF-24 climate outlook for temperature	Observed	MedCOF-24 climate outlook for precipitation	
Moldova (1991-2020)	Above normal	Above normal (20,30,50)	Mostly below normal	Below normal (50,30,20)	On certain days during the season, extreme meteorological events were observed in places across the region, including heavy rainfall and squalls: - On July 29, 86.7 mm of precipitation fell in 12 hours near the Edinet agrometeorological station; - On August 6, maximum wind speeds reached 27 m/s at the Balti and Soroca meteorological stations. Significant precipitation deficits and elevated temperatures during the summer months in the southern half of the republic contributed to atmospheric and soil droughts in June-August. The drought created unfavourable conditions for crop formation in the southern half of the Republic. The Standardized Precipitation Evapotranspiration Index (SPEI), which characterizes the degree of moisture in the territory, was -1.1 to -1.9 in the southern half of the Republic during the summer period, which corresponds to moderate to severe drought.
Montenegro (1991-2020)	Above normal	Above normal (20,30,50)	Around normal	No privileged scenario (33,33,33)	
North Macedonia (1991-2020)	Above normal	Above normal (10,20,70)	Extremely dry to normal	Below normal (50,30,20)	July: Highest value of monthly Tmax_avg 27.6 °C in Skopje. Exceeded daily Tmax on 26st in Skopje valley 43.7 °C, Ohrid 38.1 °C and 34.3 °C
Portugal *	Above normal	Above normal (20,30,50)	North: below normal South: seasonally dry	No privileged scenario (33,33,33)	
Romania *	Above normal	Above normal (10,20,70)	Below normal	Below normal (50,30,20)	

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Serbia (1991-2020)	Above normal	Above normal (20,30,50)	Below normal	No privileged scenario (33,33,33)	Third hottest and fourth driest summer since 1951 . The warmest and the driest June for Serbia . The 5th warmest July in Serbia . The new absolute maximum daily air temperature in Krusevac (44,0 ºC) and Banatski Karlovac (42,0 ºC), measured on July 26 . The driest summer in Negotin since 1941 (24.1 mm of precipitation) . Kikinda recorded the maximum number of insolation hours (1049) . Exceeded the minimum number of days with thunderstorms in Negotin (eight days), Pozega (12), Palic (nine) and Kopaonik (nine)

Slovenia (1991-2020)	Above normal	Above normal (20,30,50)	Drier than normal in the north, parts of the south, east and the northeast Wetter than normal in parts of west and north-west Normal elsewhere	No privileged scenario (33,33,33)	Sixth warmest summer on record since 1950 . June: Record-breaking warm and record-breaking dry . 3 June 2025 - A severe thunderstorm, accompanied by hailstones exceeding 5 cm in diameter, struck the northern Goricko region between 1 and 2 p.m., causing extensive damage. 26 June 2025 - The eastern half of Slovenia experienced the peak of a prolonged heatwave. Numerous locations recorded the highest June temperatures ever measured. Doblice near Crnomelj: 38.4 °C – new national June record, Metlika: 37.9 °C, Lendava: 37.4 °C, Ravne na Koroškem: 37.3 °C, Celje: 36.9 °C, Novo mesto: 36.7 °C, Lisca (947 m ASL): 32.1 °C, Rogla (1492 m ASL): 25.5 °C. Daily mean temperatures were also exceptionally high: Doblice: 31.5 °C, Celje and Cerklje ob Krki Airport: 29.7 °C, Ljubljana: 29.0 °C . 7 July 2025 - In the second half of the night (6–7 July), heavy rainfall affected parts of the Kras and Vipava Valley. Dolenje near Ajdovščina: 129 mm of rain in 145 minutes . 11 August 2025 - A record-warm morning occurred in parts of the Littoral region due to a warm air mass and bora wind. A new national record for daily minimum temperature was set at Koper Markovec, where the temperature did not fall below 28.0 °C. Other notably high daily minimum temperatures included: Podnanos: 27.0 °C, Vedrijan: 26.4 °C, Škocjan near Divaca: 23.5 °C . 14 August 2025 - Extremely hot conditions prevailed, especially along the coast, with light bora in the afternoon. Portorož Airport: 38.8 °C – new absolute record, Koper Markovec: 37.9 °C. 29 August 2025 - Intense downpours occurred, particularly in a belt from the Koper coastal area to the Ljubljana Marshes. In many places more than 100 mm of rain fell in only several hours: Postojna: 204 mm – new daily rainfall record, highly surpassing the previous daily rainfall record, Dekani: 175 mm, Kozina: 160 mm, Planina near Postojna: 143 mm.

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Spain (1991-2020)	Above normal (extremely warm)	Above normal (20,30,50)	Below normal	No privileged scenario (33,33,33)	Summer had two heat episodes considered as heatwaves were: a) 18 June– 4 July b) 3 August - 18 August The highest summer temperatures were: 45.8°C (Jérez de La Frontera, 17 August), 45.2 °C (Morón dela Frontera, 17 August), 45.1 °C (Murcia, 18 August), and 45.0 °C (Alcantarilla/, 18 August). The lowest summer temperatures were: 5.0 °C (Puerto de Navacerrada, 21 July), 5.6 °C (Molina de Aragón, 29 August) and 6.9 °C (Valladolid/airport, 2 June). The highest values of daily summer precipitation were: June: Valladolid/airport: 45.0 mm on the 11th, Donostia/San Sebastián/Igueldo: 65.6 mm on the 13th, Teruel: 32.0 mm on the 15th and Valladolid: 30.0 mm on the 11th. July, the highest precipitation recorded at main observatories were in Girona/airport: 59.6 mm on the 6th, Castelló/Almassora: 57.6 mm on the 12th and Guadalajara 39.2 mm on the 3rd. In August, the highest precipitations in main observatories were in Santander: 80.8 mm on 20th; Hondarribia/Malkarroa: 57.2 mm on the 20th, Barcelona/airport 46.9 mm on the 28th, Donostia/San Sebastián/Igueldo with 48.2 mm on the 19th and Girona/airport, 33.3 mm on the 31st.
Syria *	Above normal	Above normal (10,20,70)	Seasonally dry	No privileged scenario (33,33,33)	

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High Impact Events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Türkiye (1991-2020)	Near or above normal except north-eastern parts	Above normal West: (10, 20,70) East: (20,30,50)	Below normal in most parts Above normal at Black Sea coast	Below normal (50,30,20)	On July 25, 2025, a temperature of 50.5 °C was recorded, setting a new maximum temperature record for Türkiye. Summer 2025 was the second hottest summer season on record. July 2025 set a record as the hottest month, while June and August 2025 were ranked as the fourth hottest months on record. Maximum temperature records were broken at 5 stations in June 2025, 66 stations in July 2025, and 12 stations in August 2025.
Ukraine (1991-2020)	Above normal (40% stations) normal (59% stations) below normal (1% stations)	Above normal (20,30,50)	Above normal (17 % stations) normal (29 % stations) below normal (54 % stations)	Mostly below normal (50,30,20) West: no privileged scenario (33,33,33)	During summer meteorological extraordinary phenomena were observed in many regions of the country. In June heavy rains 30-59 mm/2-5h were recorded in Ternopil, Khmelnitskiy, Sumy regions 06-08/06/2025 . In July were three periods with heavy rains: 30-143 mm/12-24h were recorded in Zakarpatia, Lviv, Ternopil, Khmelnitskiy regions 08-10/07; 30-104 mm/12-24h were recorded in Zakarpatia, Chernivtsi, Ivano-Frankivsk, Ternopil, Khmelnitskiy regions 17-19/07; 30-55 mm/7-12h were recorded in Chernivtsi, Zhytomyr, Kyiv regions 27-29/07. Storm squalls (with speed 26 m/c) were fixed in Rivne region 24/07 and large hail (diameter 22 mm) in Chernihiv region 10/07. In August heavy rains 33-42 mm/4-8h were recorded in Zakarpatia, Chernivtsi, Lviv regions 17, 22/08. Locally caused loss power, telecommunications, utilities and transport. The summer was dry in most regions, except for the north-west of the country. June and August were the driest months in southern and central parts, when the amount of precipitation was from 2 to 19% of the norm.

Note:
*no national reports. Data base: ERA5 1991-2020 for temperature, GPCC 1991-2020 for precipitation

North Africa (RA I)

Country (reference period)	**Seasonal temperature (JJA)**		**Seasonal precipitation (JJA)**		**High impacts events**
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Algeria*	Above normal	Above normal over: The north and the east (10%, 20%, 70%) The west and the south (20%,30%,50%)	Above normal in the extreme south. Below normal in the North and the west. Near to slightly above normal elsewhere.	Dry season	No comment
Egypt*	Below to near normal over the south Above normal elsewhere	Above normal (10%, 20%, 70%)	Above normal over the south east Below to near normal elsewhere.	Above normal above the south east (20%, 30%, 50%) Dry season elsewhere	No comment
Libya*	Near normal to below normal in the centre and the south west Above normal elsewhere	Above normal (10%, 20%, 70%)	Near normal over the west Below normal over the east	Dry season	No comment

Country (reference period)	Seasonal temperature (JJA)		Seasonal precipitation (JJA)		High impacts events
	Observed	**MedCOF-24 climate outlook for temperature**	**Observed**	**MedCOF-24 climate outlook for precipitation**	
Morocco*	Near normal over the south Above normal elsewhere	Above normal (10%, 30%, 50%)	Below normal over the south. Normal to slightly above normal in the north	Dry season in the north No clear signal in the south (33/ 33/33)	No comments
Tunisia (1991-2020)	Above normal	Above normal (10%, 20%, 70%)	Below normal	Dry season	Temperature: July 2025 was ranked the 4th hottest July since 1950.The average temperature recorded was higher than the reference average (1991-2020) with a significant difference of +1.8°C.

Note:

* Data source: Temperature: NCEP/NCAR reanalysis data, precipitation: CHIRPS

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