



Third Session of Southeastern Europe Climate Outlook Forum
Online SEECOF-3, June 2010

SEASONAL OUTLOOK FOR 2010 SUMMER SEASON FOR THE SOUTH EASTERN EUROPE AND CAUCASUS REGION (SEE&C) CONSENSUS STATEMENT

Under the overall coordination of the Co-Chair of the WMO RA VI Working Group on Climate and Hydrology and experts from the South East European Virtual Climate Centre (SEEVCCC) the online session of SEECOF-3 was conducted during April-May 2010. Representatives from the National Meteorological and Hydrological Services of Southeast Europe and Caucasus region, namely Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Greece, Hungary, Israel, Moldova, Montenegro, Romania, Slovenia, Serbia, The FYR of Macedonia and Turkey participated in the implementation of the SEECOF-3. Climate experts from South Eastern Europe Virtual Climate Change Centre (SEEVCCC) (Serbia) and from the WMO RA VI RCC Network Node on Long-range Forecasting, namely Meteo France (France) and Roshydromet (Russian Federation), and on Climate Monitoring namely Deutscher Wetterdienst (Germany) provided their valuable contribution to the successful implementation of the SEECOF-3, developing the relevant documents and providing scientific guidance and recommendations.

The SEECOF-3 comprised of the following Steps:

- Step 1: qualitative verification of the SEECOF-II Winter forecast;
- Step 2: assessment of the current state of the climate including large-scale climate patterns worldwide and assessments of its likely evolution in the course of the next months;
- Step 3: building the consensus forecast for Summer 2010.

All relevant documentation is posted and updated in WMO ROE and SEEVCCC web sites:

<http://www.wmo.int/pages/prog/dra/eur/SEECOF-3.php> ,

<http://www.seevccc.rs/SEECOF-III/> .

METHODOLOGY

While developing this outlook scientists looked at the major factors, such as present and expected anomalies of Sea Surface Temperature in Atlantic, Pacific and Indian Oceans, as well as the global circulation patterns, that affect the climate over the region. Seasonal forecasts from GPCs, i.e. ECMWF, Meteo France, Roshydromet, UK Met Office, (available in the

http://www.seevccc.rs/SEECOF-III/Step%203/May_2010_SEECOF_JJA%20updated.pdf,

<http://www.seevccc.rs/SEECOF-III/Step%203/GPC-Moskov-probabilistic-products-for-JJA-14052010.pdf>) as

well as the outputs of the RCM-SEEVCCC coupled model of Serbian Meteorological Service

(<http://www.seevccc.rs/SEECOF-III/Step%203/May-Climate-outlook-for-SEE-region-JJA-Serbia-31-05.pdf>)

served as a basis for elaboration of the outlook. The models forecast consistency plots, produced by the WMO Lead Centre on LRFMME (<http://www.wmolc.org/>) were analyzed in order to reveal the degree to which model forecasts for JJA were convergent. National seasonal outlooks were provided from the NMHSs of Bulgaria, Greece, Georgia, Turkey, Serbia, Armenia, Azerbaijan (all forecasts available in the <http://www.seevccc.rs/SEECOF-III/Step%203/>).

THE CURRENT STATE AND LIKELY EVOLUTION OF THE CLIMATE INCLUDING LARGE SCALE CLIMATE PATTERNS

Assessment of the current state of the climate (April-May 2010) including large scale climate patterns worldwide and its likely evolution in the course of the next months are based on the following documents:

- Meteo-France, WMO RA VI RCC node on Long Range Forecasting, (archived on http://www.wmo.int/pages/prog/dra/eur/documents/SEECOF-3/SEECOF-3_fromJPC_JJA.pdf http://www.seevccc.rs/SEECOF-III/Step%203/May_2010_SEECOF_JJA%20updated.pdf)
- ROSHYDROMET, WMO RA VI RCC node on Long Range Forecasting, (archived on <http://www.wmo.int/pages/prog/dra/eur/documents/SEECOF-3/Current-weather-and-climate-conditions-second%20draft.pdf> <http://www.seevccc.rs/SEECOF-III/Step%202/Current-weather-and-climate-conditions-DKyktev-Second-draft.pdf>)
- Climate prediction center/NCEP/NWS El Niño/Southern Oscillation (ENSO) (http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/)

Main features considered for preparing of the climate outlook for summer season 2010 for the South East Europe region are the global sea surface temperature conditions, particularly over the Equatorial Pacific, North Atlantic, Indian Ocean and some parts of the Mediterranean Sea, which are believed to influence the summer condition. It has been noted that El Niño event continues to weaken during April 2010 as positive sea surface temperature (SST) anomalies decreased across the Equatorial Pacific Ocean. Nearly all models predict decreasing SST anomalies in the Niño-3.4 region through the Northern Hemisphere summer 2010. Most models predict a transition to ENSO-neutral conditions during April-June 2010, followed by ENSO-neutral conditions through the end of the year. However, by July-September 2010, the envelope of model solutions includes a significant number (nearly a third) indicating the onset of La Niña conditions. Even though ENSO-neutral conditions are most likely during the second half of the year, the general tendency of the models in recent months has been toward increasingly negative SST anomalies in the Niño-3.4 region. These forecasts, in addition to various oceanic and atmospheric indicators, show a growing possibility of La Niña developing during the second half of 2010.

High SST anomalies are slightly changed in the Tropical North Atlantic. Some models show consistent signal that SSTs in Tropical Atlantic, both in the North and in the South, are likely to be warmer than normal during the summer. However, some other models indicate development of cooling pattern in the Eastern part of South Atlantic Basin which extends to the Guinean Gulf. As a result some teleconnection could be expected in the Mediterranean Basin. The main change between May/June/July (MJJ) and June/July/August (JJA) forecasts is over the whole North Atlantic basin (in mid-latitudes), where models develop a “Horse shoes” pattern. This new development is important because of its relationship with Blocking regimes which could modulate slightly warmer than normal conditions in SEE. If both regimes lead to increase of temperature over the European-Atlantic region, they could have a different impact over the South East Europe region. Over the Indian Ocean SSTs are warmer than normal and they will likely remain warmer than normal with good consistency in western part of the Indian Ocean. The conditions over the Mediterranean Sea are likely to be slightly warmer than normal.

The persistency of primary atmospheric circulation patterns characterized by teleconnection indices is quite low and they can not be extrapolated into the summer reliably enough. Furthermore, the whole set of these modes explains about a half of the atmospheric variance in the winter and counts much less in summer atmospheric variance.

SEASONAL CLIMATE OUTLOOK FOR 2010 SUMMER SEASON OVER SEE&C REGION

TEMPERATURE

The outlook is relevant for relatively large areas, since the inconsistency among the models is greater at smaller scales. There is a certain degree of consistency among the global model forecasts of surface air temperature over most part of Southeastern Europe in the coming summer season. However, less degree of agreement among the global models is noted in temperature forecasts over the Caucasus and adjacent region.

Based on these signals and interpretation of the potential links of climate variability over Southeastern Europe with other global factors, it has been concluded that prevailing temperatures during 2010 summer season over the Southeastern Europe are very likely to be above normal. For eastern part of Mediterranean basin, Turkey and Caucasus region, no confident signal is detected in the forecasts, but there is lower probability that temperature shall be above normal in this region.

PRECIPITATION

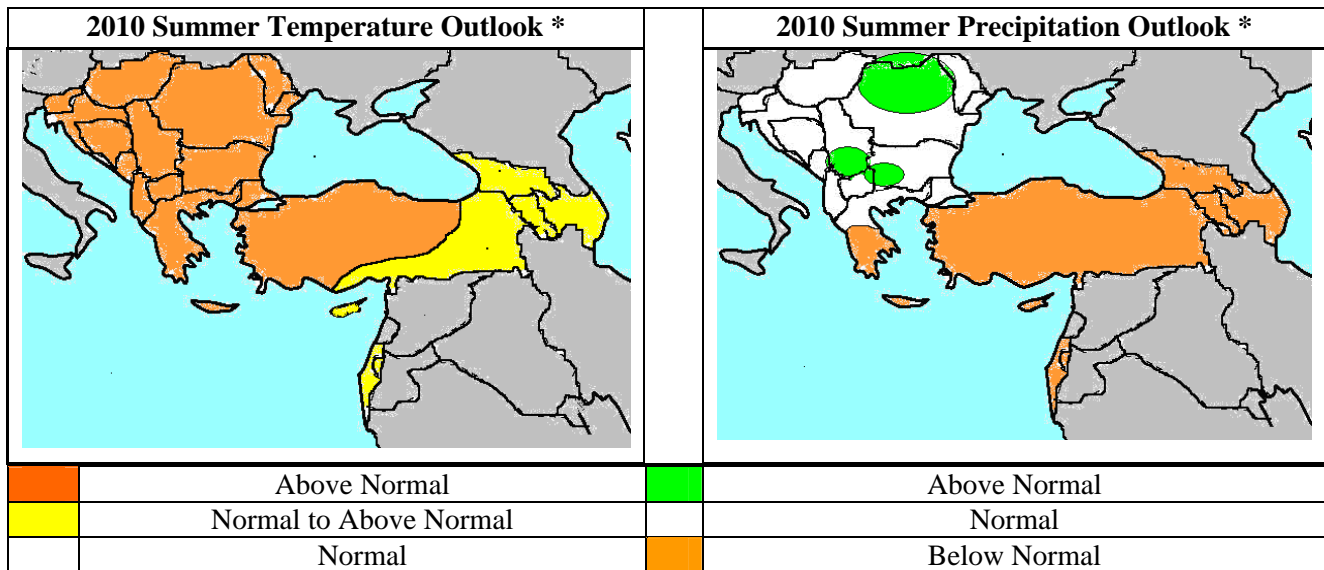
Like in the case of temperatures, there is some degree of consistency among the global model forecasts of precipitation over most part of Southeastern Europe and the Caucasus region in the coming summer season.

Summer season precipitation over the most part of the region is expected to be near normal. However, below normal precipitation is more probable in the south of the Balkan Peninsula, Turkey and Caucasus region. Some probability exists for parts of Serbia, Bulgaria and Romania to receive above normal precipitation.

CONCLUSION

Summer of 2010 is very likely to be warmer than normal in the prevailing part of South East Europe and Caucasus region.

Precipitation over the most part of the region is expected near normal with some probability of below normal rainfall over Turkey, South of Balkan Peninsula and Caucasus.



* The graphical representation of climate outlook in this statement is only for guidance purposes, and does not imply any opinion whatsoever concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.