



## **SOUTH-EAST EUROPEAN CLIMATE OUTLOOK FORUM (SEECOF-22) 26 November 2019**

### **SEASONAL OUTLOOK FOR THE WINTER SEASON 2019/2020 FOR THE SOUTH EASTERN EUROPE AND CAUCASUS REGION (SEE&C)**

Climate experts from WMO RA VI RCC Network Node on long-range forecasting (Meteo France, France and Roshydromet, Russia) and WMO RA VI RCC Network Node on climate monitoring (Deutscher Wetterdienst, Germany), Global Producing Centre ECMWF, International Research Institute for Climate and Society (IRI, USA), National Centers for Environmental Prediction (NCEP, USA), South East European Virtual Climate Change Centre (SEEVCCC, Serbia), and National Hydrometeorological Services of the SEECOF region provided their valuable contribution to the successful implementation of SEECOF-22 by developing relevant documents and providing their scientific guidance and recommendations.

SEECOF-22 was composed of the following Steps:

- Step 1: qualitative verification of the SEECOF-21 climate outlook for 2019 summer season;
- Step 2: assessment of the current state of the climate, including large-scale climate patterns worldwide, and assessments of likely climate evolution in the course of the following months;
- Step 3: building the consensus forecast for 2019/2020 winter season.

All relevant documentation is posted and updated on the SEEVCCC web site:  
<http://www.seevccc.rs>

## SEECOF-22 CLIMATE OUTLOOK FOR 2019/20 WINTER SEASON

This prediction is based on output from dynamical models, statistical models and known teleconnections of large-scale climate features prepared by MedCOF-13, which also applies and has been adapted to the South East European region.

Observed sea surface temperatures and forecast for the coming three months show neutral ENSO conditions with most models showing high agreement for ocean evolution. The Indian Ocean Dipole (IOD) is main driver showing a clear signal with strong positive phase (warm anomalies over western tropical Indian Ocean and cold anomalies over the East), influencing the atmospheric circulation. Consequently, this positive phase translates to drier than normal signal over the Maritime Continent and Australia and wetter than normal conditions over eastern Africa. Most models tend to show teleconnections with IOD foreseen towards Middle East and Central Asia. As continuation of previous forecasts, models show good agreement on favour of positive phases of East Atlantic (EA) and North Atlantic Oscillation NAO (which are two main modes of variability over the Atlantic), possibly linked with the strong IOD positive signal.

Winter temperature is likely to be above-normal in the whole SEECOF region. Probabilities for the above-normal conditions are higher in the Pannonian Plain, Carpathian region, Western and Central Balkans, Greece, along the coasts of Adriatic and Ionian Sea, as well as Eastern Mediterranean, (zone 1 in Figure 1).

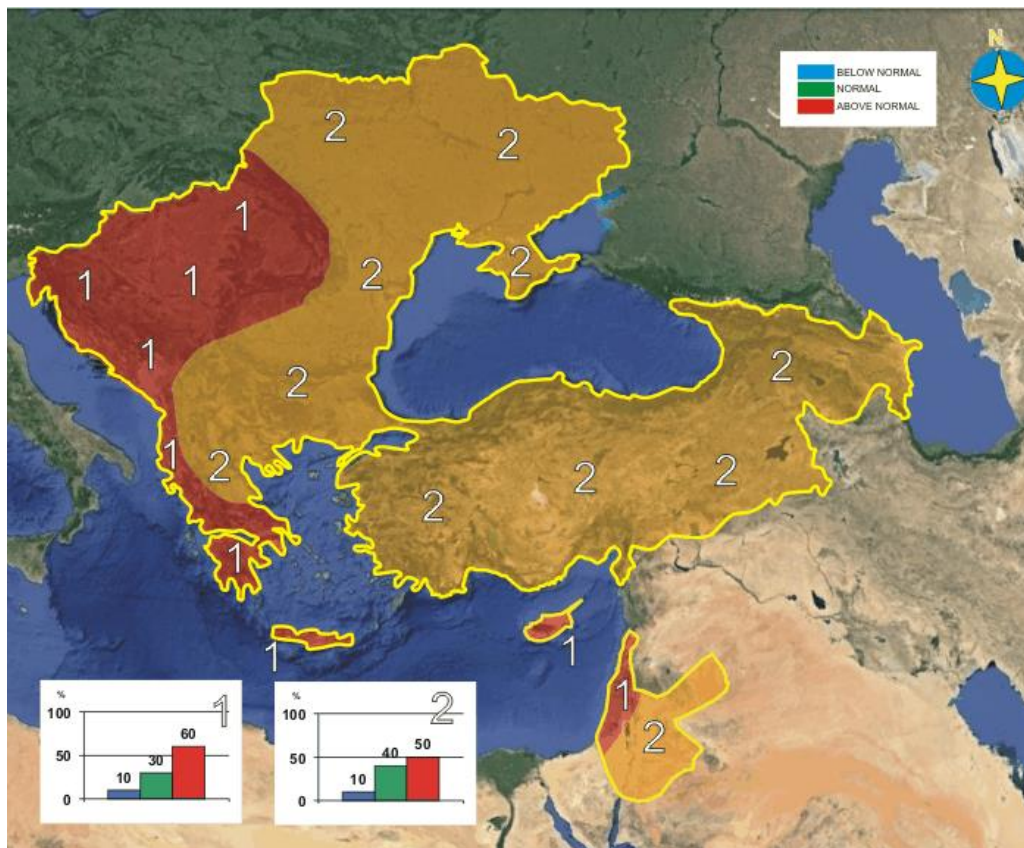


Figure 1. Graphical presentation of the 2019/20 winter temperature outlook

In most of the SEECOF region (zone 1 in Figure 2) the uncertainty for precipitation is high, i.e. probabilities for below-, near- or above-average conditions are approximately equal. Winter precipitation totals are likely to be below--normal (zone 2 in Figure 2) in the eastern Balkan Peninsula and southern Ukraine. Near-normal to above-average seasonal precipitation sums (zone 3 in Figure 2) are expected in the South Caucasus region and northeastern Turkey.

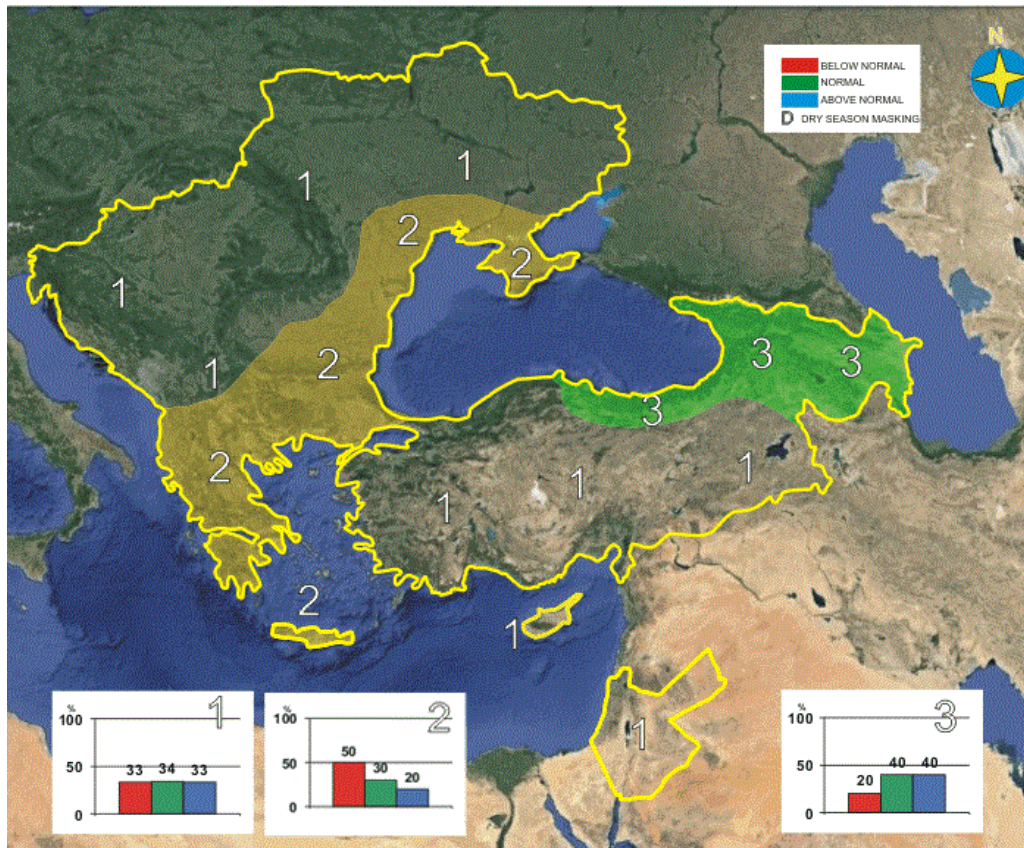


Figure 2. Graphical presentation of the 2019/20 winter precipitation outlook

Sub-seasonal developments may occur so regular updates to the forecast are strongly recommended. In addition, local factors (for example SSTs in the smaller basins of the region) may shape local variability at a regional level.

The maps show the probabilistic consensus forecast for tercile categories of anomalies for seasonal mean temperature and precipitation, relative to the period 1981-2010. Due to the climate warming, trend anomalies are affected by the selected reference period.

Seasonal averages cannot provide details about short spells of weather during the season. It is possible than even in an average season spells of severe wintry weather (for example: winter storms, very cold episodes, very wet spells) occur and lead to significant local socio-economic impacts.

Note that it is necessary to express seasonal forecasts in terms of probability due to inherent uncertainty. Any further advice on the forecast signals, shorter-range updates and warnings will be available throughout the winter from the National Meteorological Services, along with details on the methodology and skill of long-range predictions.

*\* 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.*

#### **APPENDIX A: Contributors to SEECOF-22**

- World Meteorological Organization
- Met Office, United Kingdom
- Météo France, Republic of France
- Roshydromet, Russia
- European Center for Medium Range Weather Forecasts
- Deutscher Wetterdienst, Federal Republic of Germany
- Centro-EuroMediterraneo sui Cambiamenti Climatici (CMCC), Italy
- International Research Institute for Climate and Society, United States of America
- National Center for Environmental Prediction, United States of America
- South East European Virtual Climate Change Center hosted by Republic Hydrometeorological Service of Serbia, Republic of Serbia
- Armenian State Hydrometeorological and Monitoring Service, the Republic of Armenia
- National Institute of Meteorology and Hydrology, Republic of Bulgaria
- Meteorological and Hydrological Service, Republic of Croatia
- Meteorological Service, Republic of Cyprus
- Hellenic National Meteorological Service, Greece
- National Environmental Agency of Georgia, Georgia
- Institute of Geosciences, Energy, Water and Environment, Albania
- Israel Meteorological Service, State of Israel
- Jordan Meteorological Department, Hashemite Kingdom of Jordan
- Republic Hydrometeorological Institute, Republic of North Macedonia
- Hydrometeorological Institute of Montenegro, Montenegro
- National Meteorological Administration, Romania
- Federal Hydrometeorological Service of the Federation of Bosnia and Herzegovina, Federation of Bosnia and Herzegovina, Bosnia and Herzegovina
- Republic Hydrometeorological Service of the Republic of Srpska, Republic of Srpska, Bosnia and Herzegovina
- Republic Hydrometeorological Service of Serbia, Republic of Serbia
- Slovenian Environment Agency, Republic of Slovenia
- Turkish State Meteorological Service, Republic of Turkey
- Ukrainian Hydrometeorological Center, Ukraine