

Meteorological phenomena of risk in the Bâc hydrographic basin

Anatolie PUȚUNȚICĂ

Ion Creangă State Pedagogical University, Chișinău, Republic of Moldova

Corresponding author: A. Puțuntică. E-mail: aputuntica@gmail.com

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Article 1 of the UN Convention on Climate Change defines “climate changes” as “climate changes that are directly or indirectly attributable to human activities and which determines the change in the composition of the global atmosphere, overlapping with climate variability observed in the same period of time”.

The climate changes in the Bâc watershed are part of the global trend of warming, and these changes can be observed by analyzing the frequency of some meteorological phenomena risk (fog, sleet, blizzard, hail). Analysis of appearance the fog tendency in the evolution aspect shows us a decrease in the Bâc hydrographic basin, starting from the '90s of the 20th century, when the rate of climate warming had been increasing. Analysis of the change trend in the annual number of days with glaze frost finds a general tendency to decrease, more significantly being expressed in the south-eastern part of basin, which is explained by regional changes as a consequence of climate change. Because of the frequent temperature alternations of the last decades during the winter, in regional aspect starting from the 80s of the 20th century, a decrease of the given phenomenon is observed. Territory analysis of the Bâc basin, in relation to the manifestation of scurvy, shows us that the territories most vulnerable to this phenomenon belongs to the northwestern part, due to the higher elevation of the relief, with a predisposition favorable for cold air advection, and the south-east of the basin is somehow more protected from cold air, the relief dropping significantly in altitude. The analysis of the obtained data shows us that in evolutionary terms the hoar-frost phenomenon shows an increasing tendency, especially in the northern and central part of basin, where the temperature changes are more significant. Annually, the largest number of blizzard days occur in the lower plain regions of the Bâc river. Increasing the number of the blizzard days in the southeastern part could be explained by the physical-geographical position of this station, at the “mouth gateway” to the Romanian Plain, “guarded” to the north by the Carpathian Curve and to the south by the Massif Northern of Dobrogea, which causes a channeling of cold air masses of arctic origin from the north and northeastern Europe, simultaneously with their interaction with the warm ones, of tropical origin from the Mediterranean Sea. A decrease in the annual number of blizzard days was found in the urban topoclimate regions (Chisinau 1,0 days), where the high density of tall buildings diminishes its manifestation.

References

- Ciulache, S. 2004. Meteorologie și climatologie, Editura Universitară, București, 466 p.
- Mihăilă, D. 2014. Atmosfera terestră. Elemente de favorabilitate sau nefavorabilitate pentru organismul uman și activitățile turistice, Editura Sedcom Libris, Iași, 234 p.
- Statistica meteorologică a Serviciului Hidrometeorologic de Stat (SHS).
- Babichenko, V.N. 1991. Stihîfnâie meteorologhiceskie iavlenia na Ukraine i Moldavii, Leningrad, s. 223.

***Naucino-prikladnoi spravocinik po klimatu SSSR. 1990. vâpusk 11: Moldavskaia SSP, Leningrad, s. 192.

***<http://old.meteo.md/newsait/iarna2020.htm> (accesed 22.10.2022).

***<http://old.meteo.md/arhivtemper.htm> (accesed 21.10.2022).