

Impact of Climate Change on the River Runoff (On the River Vere Example)

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In the conditions of global warming, instrumental hydrometeorological surveillance systems are of great importance. For the observation period by the TSU Hydrometeorological Laboratory employees (1963-2018), the cyclical variability of climate change for the period of 1963-1990, 1991-2000 of the last century and 2001-2018 of the new 21st Century was determined, in particular the influence of some meteorological factors on the hydrological regime of the River Vere, i.e. the variability of average perennial flows.

We find that for the first period (1963-90), air temperatures and precipitation are close to the average perennial indices, the norm, and the corresponding water flow rate ($0.93 \text{ m}^3/\text{sec}$) is within the norm. During the second period there is a growth in temperature and a significant decrease in precipitation, resulting in a significantly reduced water flow rate ($0.89 \text{ m}^3/\text{sec}$). In the third period, as a result of the increase in air temperature (14.1°C) and precipitation (514 mm), which was reflected in the huge, including catastrophic floods frequented in the result of heavy, intensive rains, the water flow rate increased to $1.15 \text{ m}^3/\text{sec}$, which is characteristic and directly related to climate change factors.