



Impact of Climate Change on Reference Evapotranspiration in Bulgaria

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From an agricultural point of view Bulgaria has insufficient and uncertain water resources. For the last decades, the temperature sums of the potential vegetation period almost all over the country submit to a positive tendency, the rainfall sums – to a negative one. This is evidence for the current drought processes determined by the global climate change. The increasing atmospheric drought causes an increase in the evaporation losses and a decrease in soil water content. It is of particular interest how the evapotranspiration of crops is impacted by both phenomena in combination with the physiological response of the plant. The first step to get an answer of this question is to investigate the act of the reference evapotranspiration in the changing climatic conditions. The paper deals with the impact of the contemporary climate changes upon the hydrothermal conditions and FAO Penman-Monteith reference evapotranspiration in Bulgaria. The data processed are collected from 21 sites all over the agricultural territory of the country and cover the period 1971-2000. The hydrothermal conditions in Bulgaria are characterized by Selyaninov hydro-thermal factor. The results are illustrated in graphics and zoning maps. This investigation will contribute for amplification of the farming strategies and agricultural production management with proper irrigation scheduling and suitable agricultural practices in adaptation to the climate changes of the region. The results are worth for elaborating a basis for new project standards of designing irrigation networks.