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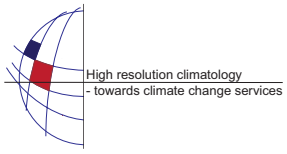

Future state of the climate change, mitigation and development of sustainable agriculture in Bulgaria

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The farming is one of the most important branches that bring the increase to the gross internal production in Bulgaria. At the same time, the agriculture is the only branch, as in home, so in world scale in which the made as well direct production spending and investing regenerating (or not) only in the frameworks to one vegetative season. In addition on this, development of the intensive farming without using the most advanced technologies such as irrigation, automation, selection – for obtaining stable cultivars and hybrids, permanent weather monitoring and agroclimatic zoning and integrated and biochemical protection to the cultures and plantations had not possible.
Analysis of long-term meteorological data from different regions shows clear tendencies to warming and drying for the period of contemporary climate (1971-2000) as well in Bulgaria. Hydro-meteorological conditions in the country are worsened. The most entire estimate is made from the Intergovernmental Panel for Climate Change (IPCC) 2007. Most of authors proven that the last decades are really warmest for last century, even for the entire period of the most instrumental observations. The causes for global warming was long time debatable, but the last investigations prove it anthropogenetic derive.
The main goal of the paper is framing in conditions of the expected climate changes in our country for period 2020-2050-2070 and the most likely impacts on the agriculture with inspection padding to the consequences in them and making physical conditions for development of proof farming in production regions of the country.
By the means of the systematized database of meteorological and agrometeorological data which we have at disposition for the period of this survey (1971-2000); Provide assignment of the expected climatic changes according to the scenarios in the centers for observing and investigations of climatic changes in Europe, US., Canada and Australia (ECHAM 4, HadCM 2, CGCM 1, CSIRO-MK2 Bs and GFDL-Rs15) for the periods until 2020-2050-2070. Recover the growth, development and the productivity of the agricultural crops by means of the simulation models as WOFOST, DSSAT and calculation the reference evapotranspiration by CROPWAT model for the production conditions of the country and in correspondence with expected climatic changes; Actualization of existing agroclimatic zoning in Bulgaria for growing main for agriculture field crops, fruits, vegetables, vineyards and forage herbs. Was determinate regions for irrigation and appropriate crops and low-favored for agriculture regions with connection of expected changes 2020-2050-2070. It was investigated relations between the biological (stages of phenological development and yields) and agroclimatic (temperatures, precipitations, soil moisture content, balance of NPK in soils etc.); Find of resources indices and hydrothermal indices for agroclimatic conditions and their applicability. Start process of structuring of agricultural production in dependence from the real and potential resources of the six regions of the country further to the expected climatic changes in 2020-2050-2070.
Finally was prepared recommendations for agroclimatic zoning in the practices on the state administration and MAF, investing policy for concentration of National and European funds for farming and insurance companies at determining the their insurance policy.