



## **Water resources change in Russia, Ukraine and Belarus in the post-soviet period**

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In recent decades large changes in the state, formation and utilization of water resources have taken place on the territory of the former Soviet Union. There are several reasons for this.

Water resources change is caused by different natural and anthropogenic factors. The main reason is climatic, first of all warming during cold seasons and augmentation of rainfall in winter and in summer. During the last 15 years on the territories of Russia and Belarus the rise in river runoff has been observed. Changes in the river runoff in Ukraine were not so certain in the ninetieth but at the very end of the 20th century the raise was also seen.

Change of the climatic conditions coincides with the human impact on water resources. After the collapse of the Soviet Union there were great changes in political, social and economic spheres of the new formed states. The economic recession as well as the economic rise since the last years of the 20th century has affected the state of water resources. During the last 15 years water use and therefore water sewage reduction has been well seen.

The structure of water consumption and therefore of all water management is defined by climatic conditions. First of all it is seen in irrigated agriculture, but also takes place in other branches of water management. We tried to show the dependence of some water consumption characteristics on the mean annual air temperature and on its correlation with the annual precipitation in the regions of the Russian Federation, Ukraine and Belarus. It was found out that in the regions of Russia with low air temperature water consumption per area unit is less than on the territories with high air temperature. This is typical for the period of economic recession after the collapse of the USSR, as well as for the period of economic growth during the last years. Besides, more severe climate in Russia causes lower water consumption per area unit, at the same time in Russia self-purification is less intensive than in Belarus and Ukraine.

The same picture as for general water consumption is typical for industrial water use, domestic water consumption and especially for irrigated agriculture. On the contrary, calculating per head correlation of water consumption with climatic conditions is not seen because of the considerable influence of socio-economic factors. We also tried to find out correlation of the cost-effectiveness of water use (gross domestic product per used water unit) with the annual air temperature. The result illustrates that it is necessary to take into account the climatic conditions while investigating the cost-effectiveness of water use in different countries and regions.

Today the water management in all former Republics is directed towards gradual stabilization, but if adequate measures are not assumed the situation with water resources will deteriorate.