

## **Ecological and Economic Risks in the Joint Use of Water Resources of Border Rivers of Russia and Belarus**

Yuri Mazhayskiy<sup>1</sup>, Lubov Hertman<sup>2</sup>

<sup>1</sup>Meshchersky branch All-Russian Research Institute of Hydrotechnics and Melioration  
named after A. N. Kostyakova, Russia

<sup>2</sup>RUP "TSNIIKIVR", Russia

doi: <https://doi.org/10.21467/abstracts.93.51>

### **ABSTRACT**

The water availability of the territory is an important part of its economic potential. Global warming is accompanied by a reduction in water resources in a number of regions due to climate desertification. The water availability is reduced not only in arid regions; the water shortages can be also very sensitive in relatively humid places with a high level of economic water consumption. This problem is particularly acute in transboundary river basins, since it affects the interests of states - water users. In order to avoid interstate conflicts, the concept of noosphero genesis should be used. This can be achieved through the rational management of water resources in the basins of transboundary rivers on the basis of developed international agreements involving not only neighboring countries, but also third arbitration states. The basis of such agreements should be a water-saving policy aimed at taking into account mutual interests and compensation for environmental damage.

The main task in the research of transboundary water resources at the present stage is a comprehensive assessment of their current state, taking into account the spatio-temporal fluctuations and changes in the main components of the water balance of river water-collecting header. At the same time, it is necessary to take into account the effects of various natural and anthropogenic factors on them, the forecast of changes in water resources under different scenarios of climate development. Based on the scientific results obtained, it is necessary to develop measures to minimize the possible negative consequences in case of a change in the regime of water resources.

Considering the critical importance of the problem of transboundary water resources management, including the introduction of water saving policy, a broad cooperation of scientists' efforts to study, predict and control the regime and resources of water is needed. It is also important to develop international cooperation on this issue through the joint implementation of scientific research and the exchange of information, including the development of water projects.

This research aims to develop intellectual intelligent water management in transboundary river basins. It concerns the formation of an innovative approach to solving the problem of reducing water resources in the jointly managed territories of the catchment basins of transboundary rivers. The creation of an informational signal base for influencing on water resources as a unified bank of the data of participating countries is methodologically justified. The analog modeling of methods of environmental damage compensation when using transboundary rivers is proposed.

