THE KOZŁOWA GÓRA DRINKING WATER RESERVOIR'S CATCHMENT AS A PILOT AREA IN A MULTI ASPECT SURVEY IN ORDER TO ASSESS THE IMPACT OF LAND USE MANAGEMENT AND CLIMATE CHANGE ON GROUNDWATER RESOURCES

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The Kozłowa Góra drinking water reservoir is one of the pilot areas in a transnational project PROLINE-CE, whose main aim is to improve protection of drinking water resources as well as protection against floods/droughts in an integrated land use management approach. One of the objectives is to minimalize conflicts between protection of water resources and land use management as well as results of climate change.

To meet the assumptions of the project a multi aspect water resources monitoring study was set up. Within the studies a groundwater research, in both quantitative and qualitative aspects, was conducted. The research took into account the reaction of the water table of the first aquifer in relation to the groundwater recharge fluctuations caused by precipitation variable in time. The aquifer is recharged directly from precipitation. Water table responses strongly to changes in meteorological and hydrological conditions.

One of the monitoring object was also identification of groundwater quality and potential sources of pollution. Field study concerning identifying of chemical status, potential sources of pollution as well as laboratory analyzes of isotopic composition of sulphates in groundwater were carried out. The results show that groundwater in the study area is characterized by varying degrees of anthropogenic pollution, but generally these are waters of poor chemical status. The obtained results of isotopic composition of sulphur and oxygen in sulphates were compared to the typical values of $\delta^{34}S$ and $\delta^{18}O$, characteristic for sulphate sources in water resources. Isotopic composition results analysis indicates three groups of the origin of the sulphates in water: (1) atmospheric precipitation or dry deposition, (2) municipal sewage and (3) mixed origin.

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