USE OF GIS IN HYDROGEOLOGICAL AND ENVIRONMENTAL STUDIES
(CASE STUDY: ERZENI RIVER BASIN)

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Abstract

In hydrogeology it is often necessary to optimally manage the water resources at a basin scale. This management should take into consideration the effects of a range of various factors, such as land cover, vegetation, soil type, topography, geology, etc., from which depend the quantity and quality of water. In addition, to the above factors should be added the potential sources of water pollution, which are related to the human activity, including the spatial planning, as well as to natural causes. Data and information available or published by various public institutions are often presented in various spatial reference systems, and in different mapping scales. Furthermore, in general, the data on the water quantity and quality, for different water wells in a basin, belong to different time periods, which differ from well to well.

To have a holistic view of the water sources in a basin, it is indispensable to analyze and synthesize the role of all factors and data/information mentioned above. This is realized through the use of GIS, from which can be obtained different "smart maps", built on the information presented from simple tables of data/information, which indicate the values of specific parameters of a basin. GIS make possible the correlation between the processed data/information and the spatial coordinates of the point to which the data/information relates. So GIS presents, in a spatial model, the data and information recorded in tabular forms.

This poster illustrates the case study of the Erzeni River basin, the quantity and quality of which water depends on various natural (land cover, geology, topography, soil type, vegetation cover, etc.), and human factors (spatial planning, industrial/agricultural pollution, gravel and sand extraction, erosion of river beds, environmental problems concerning the recharge areas and the sanitary zones, etc.). All the data/information collected are processed through GIS. As a result, it is obtained a set of maps, which indicate different characteristics of this basin, including the environmental aspects.

Keywords: *GiS, data/information, Erzeni River, data/information, correlation*