

Geoecological assessment of the Batumi-khulo-Goderdzi highway (Autonomous Republic of Adjara)

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The research focuses on the geoecological assessment of the Batumi–Khulo–Goderdzi highway (located in the Autonomous Republic of Adjara), which is one of the most significant transport arteries in the region. The study area is notable for its geological, geomorphological, hydrological, and climatic conditions, and is further characterized by the activation of geodynamic processes. The highway has a strategically important location and plays a crucial role in connecting the mountainous regions of Adjara, thereby contributing to the deepening of regional integration. The aim of the research is to conduct a geoecological assessment of the Batumi–Khulo–Goderdzi highway, to identify existing environmental hazards and risks, and to develop appropriate measures to mitigate or eliminate those problems. The object of the study is the Batumi–Khulo–Goderdzi highway, which passes administratively through the municipalities of Khelvachauri, Keda, Shuakhevi and Khulo.

The main objectives of the independent research are to study the geomorphological, hydrological, and geological features of the highway; to identify high-risk zones; and to develop recommendations for ensuring the safe and environmentally sustainable operation of the road.

The novelty of the research lies in the fact that such a geoecological analysis of this highway has not been previously conducted. The study focuses exclusively on the geodynamic processes and ecologically sensitive zones along the Batumi-Khulo-Goderdzi highway.

As a result of the research, specific zones subject to intense landslide and erosion processes have been identified. A geodynamic hazard database and zoning map of the highway was created, dividing the road into segments according to hazard categories. In addition, recommendations were developed for the ongoing monitoring of the road and the planning of preventive measures.