

Hazards of Natural Floods and their Management in Mountainous Regions of Georgia

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Abstract:

Against the background of modern climate warming, the intensity of atmospheric precipitations, melting of glaciers, the arrival of landslides and rock avalanches, floods and mudflow, droughts and related forest fires have intensified in the world. This is the main issue for the world's climate warming management policy.

Georgia is also distinguished by the frequency of such natural events, especially in its mountainous part. It should be noted that the melting of glaciers, waterfalls, and floods has become more active in response to climate warming. The dammed lakes are also connected with these processes. Catastrophic floods accompany their breakthrough. There have been past examples of them in Georgia, and they are actively taking place now; a classic example is August 2023 in Racha, Shovi resort. (Gorgijanidze et al., 2023)

This was preceded by the melting of glaciers, which occurs in all those areas with an intensity of global climatic warming. Topographic maps were prepared, and with their help, the action of the glacier in the entire Buba River valley was investigated during that period. (Gordeziani et al., 2023). Military units of the Ministry of Defense helped in the rescue process. Soldiers searched for people based on studying the topographical map and using modern techniques.

It is important to learn to manage them. It is important to mention the relations between the National Environmental Agency of Georgia and the international consulting Swiss company "GEOTEST AG". As a result, an early warning system has been installed on the Devodrak glacier.

It should be noted that monitoring and observation are currently not carried out everywhere. In 2017, in June, on the 56th kilometre of the Pshaveli-Abano-Omallo highway, at the place of Nashliani, landslides of mass fell, which, in fact, completely blocked the Alazani River of Gometsri and created dam Lake Khiso. The danger is high, because every time it rains, the lake level rises, covering the highway.

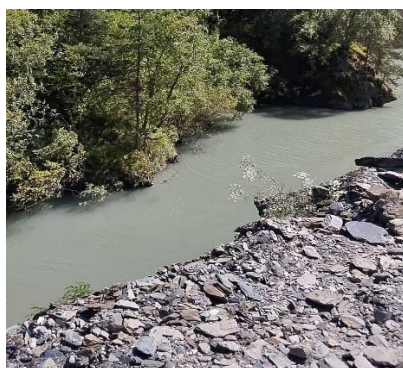


Fig. 1 Damm lake Khiso (by photo S. Gorgijanidze)

The Tsaneri Lake on the Tsaneri glacier is of such a new origin. However, this lake is a geographical object formed in the moraines and depressions there during the glacier retreat over time. The lake has not been fully studied, although periodic observations are being made. As Levan Tielidze (2021) notes, the lake can burst and flood at any time, (GLOF). It is important to study this region's maps and the hydrographic situation. It is important to install early warning systems in all critical areas. Channels and drains should be made considering the mechanism of natural occurrence.

References

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