



## **The economic risk of the landslides on Northern Caucasus**

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Almost all types of natural disasters are observed on the South of Russian Federation. Though the landslides can influence small territories but they can lead to the economical losses, which are comparable with the losses, caused by floods, and the peoples' death can be caused by landslides. The meteorological, orographical, geological and geobotanical conditions of Northern Caucasus are favor to the distribution of landslides on the whole territory of the region.

Risk is the function of the exposure, vulnerability and protection of the object from the dangerous natural phenomena. In the estimation of the risk of slope process (such as snow avalanches and landslides) the following parameters are used: the probability, the vulnerability of the objects (in the time and space), social-economical parameters.

It is worth to say, that there is no methods of estimation the risks in economical parameters nowadays in small and middle scales. The specific of using the economical parametrs in the estimation of the risks is that the value of gross regional product or it's analog for the municipal districts and it's density on the territory are used. The proposed methods of estimation the economical risk can be used in small and middle scales.

So, the final formulas for the estimation the complete and specific economical risk of the landslides include the exposure in time and space, the value of production funds and the coefficient of vulnerability of the buildings.

The specific economical risk is defined almost the same way, but with the value of production funds per 1 km<sup>2</sup>.

To calculate the characteristics and to find the values of complete and specific economical risk of the landslides the GIS systems were used and the maps for each parameters were build.

On the regional level the biggest value of the complete economical rick of landslides is registered in the Dagestan Republic (more than 10 millions rubles) and in Krasnodarski krai (more than 2,5 millions rubles). In the Shamilskki region of the Dagestan republic the absolute maximum on the district level is recorded – more than 2,7 millions rubles and more than 1 million in Adler region in Krasnodarskyi krai.

The distribution of the values of the complete economic risk in general duplicate the distribution of complete economic risk.

The developed methods of estimation the complete and specific economical risk of landslides made possible to calculate the values for all the municipal districts in Northern Caucasus and estimate the losses, which can be used in the developing of the territory.

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