Methodology of feasible evaluation of the expected threats of the river

Davit Kereselidze[1], Gamarli Dokhnadze[2], Vazha Trapaidze[1],

E-mail: davit.kereselidze@tsu.ge
[1]Department of Geography, Iv.Javakhishvili Tbilisi State University, 0179, Tbilisi, I.Chavchavadze #3
[2]Institute of Water Management of Georgian Technical University. 0162 Tbilisi, I.Chavchavadze #60

Due to a great number of rivers in Georgia, the selection and development of the methods to evaluate the threats expected from the rivers is much important for the country. Despite the fact that there is much done in predicting floods and freshets, the question is not ultimately solved, and even the best results gained by using various methods suggest significant deviations from the reality.

The presently available methods to forecast the expected threats related to rivers can be classified as probabilistic and determinist methods. The probabilistic methods are mostly based on the theory of random processes and are used to identify the numerical values of the parameters characterizing the floods and freshets. The probabilistic methods, compared to other methods, completely show the variability of floods and freshets in time and random nature of the factors determining the floods and freshets. As for the determinist methods, they are based on Saint Venant equation, whose analytical solution was much difficult. Consequently, there are a number of simplified methods used to calculate floods. These methods are divided into the following groups: empirical methods, linear models, hydrological methods and numerical methods.

The study of floods and freshets for different scenarios must be done by using a complex approach to receive maximally thorough and effective picture.