

Some issues of calculation of minimum runoffs and sanitary-ecological discharge of small mountain rivers

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Most part of Georgian rivers is represented by mountain rivers, for which high specific energy potential is characteristic that draws permanent interests of investors. In this regard are especially noteworthy small rivers, for which the large-scale assessment of regime elements of runoffs is of great importance. Minimum runoffs is one of the key issued of hydrological calculations, since minimum discharges of water course determine not only sizes of projected enterprises and population centers, but also the opportunity of their disposition at this place. At the same time is necessary to determine sanitary-ecological discharge, i.e. amount of water, which has to run permanently through riverbed in order to preserve its transportation capacity and river ecological system, in general.

Initial data of minimum runoffs at small mountain rivers don't exist in some cases or they are not correct. Also there are no normative standards, determining the calculation rule of sanitary-ecological discharge. During designing of hydrotechnical facilities is used the common practice, which takes into account keeping (preservation) of some part of minimum runoffs or average multiyear discharges in the riverbed. With that during last years, due to climate changes river runoffs have different response that is reflected in obvious variability of peaks of maximum and minimum levels and water discharge according to seasons.

Establishment of precise chronological changes of runoffs' determining factors and forecasting their virtual changes for long-term period is very difficult task and we have to proceed to calculations of minimum runoffs and sanitary-ecological discharge of small mountain rivers with utmost care in order to prevent irreversible negative effect on environment caused by operation of hydrotechnical facilities.