Evaluation of the risks of flooding of the eastern coast of the Black Sea (Georgia) associated with the climate change

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In line with the forecast of the 4-th Report of the Intergovernmental Panel of Climate Change (IPPC, 2007), the changes of the average temperature field of the atmosphere and ocean, intense melting of ice and snow cover and increased average sea level are an objective evidence of the global warming cycle. Global warming and process of climate change in the Black Sea area of Georgia are accompanied by several phenomena, provoked by the mentioned processes, such as increased storm intensity and frequency, displaced line of breaking waves deeper the land, increased flooded areas at the river mouths, more frequent catastrophic floods and freshets. According to the observation data (statistical data) available in Georgia and experts' evaluations, one of the most sensitive areas to the given phenomena is the section between the rivers Supsa and Natanebi.

The mentioned section has a complex contour and relief. It is dissectioned by many tributaries, which are characterized by abundant drift and intense sedimentation processes. The accumulation processes along the given section are intense and catastrophic freshets are very frequent, what on its turn drastically increases the flooding areas at the mouths. The flooding areas are also increased due to the more frequent stormy events and increased strength of storms. Therefore, the risk of land flooding at the mouths of the rivers in the coastal zone is drastically increased. This causes the washout and flooding of the coastal line and threatens the operability of existing and planned extremely important economic objects and exploited infrastructure in the area.

The study and solution of the task of flooding was undertaken for different provisions what enabled us to develop the scenarios most close to the real picture of flooding the mouth of the river Natanebi.