



Potentially dangerous glacial lakes in Kyrgyzstan - Research overview of 2004-2015

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Global warming causes intensive melting and retreat of glaciers in most of high mountains all over the world. This process is also evident in the mountain regions of central Tien Shan. Glacier melt water affects changes in hydrological regime of water streams and causes overfilling of high mountain lake basins. The dams of many lakes are very unstable and can burst open. To determine the degree of such risk, it is necessary to analyse the genesis of lakes, to characterize the morphology of the lake basins and to know the particularities of their hydrological regime. According to the latest inventory within territory of Kyrgyzstan, a total of 1328 lakes have been identified as potentially dangerous, 12 lakes are considered as currently dangerous, other 25 feature high potential hazard. Since 1952 more than 70 disastrous cases of lake outburst have been registered. The hazardous alpine lakes are studied in Kyrgyzstan systematically since 1966.

Since 2004, Czech-Kyrgyz research team has been operating in Kyrgyzstan in the field of dangerous glacial lakes. Projects were focused primarily on high-mountain glacial lakes risk assessment, propositions of risk mitigation measures, establishment of permanent research station near one of the studied glacier complexes, preparation of risk analysis for selected endangered valleys, evaluation of climatic and hydrological data and glacier development within observed regions. The most significant portion of data and information has been gathered during field work, complemented by satellite image analysis and surveillance flights over the monitored sites.