

## **Integrated geographical research in the Khovd River basin (Mongolia)**

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Khovd River located in the endorheic basin of Grate Lakes Depression is a main river of western Mongolia. It has more than 500 km length and runs from the glaciers of the Tavan Bogd Mountains through different vegetation zones to the terminal Khar-Us lake. The main purpose of the study is to estimate the current state and dynamics of the geosystems in this river basin as it plays a critical part in the water supply of submontane desert steppe plains of western Mongolia. One of the objectives is to understand the formation and regime of water discharge in this inland river basin with glaciation.

The results are mostly based on the 2013-2016 integrated field research including glaciological, meteorological, hydrological and dendrochronological measurements as well as hydrometeorological stations' data analysis and remote sensing data acquired from satellites. Last year the main attention was given to hydrological and hydrochemical research. In summer we measured TDS concentration in 71 points throughout the stream course of Khovd River and its tributaries. TDS is changing from 0-1 ppm at glaciers to 67 ppm at river mouth and 93 ppm at Khar-Us lake. The hydrochemical analysis shows that the water type is changing from hydrocarbonate-calcium at the beginning of the river to the sulfate-calcium at the mouth. Glaciers play a crucial role in feeding the river only in its upper part. Glaciological study revealed that the areas of the main glaciers were not much changed since 1989, while the glacier tongue regression was fixed. The total glacier area decreased approximately by 4.5 % in the Tsagaan-Gol basin and by 6.9 % in the Tsagaan-Us basin from 1989 to 2013. Large glaciers were retreating at an average rate of 28-34 m/year between 2001 and 2014.

The hydrometeorological data analysis shows that most of the catchment area is characterized by aridization tendency for the last 10 years. This fact is well confirmed by the dendrochronological streamflow reconstruction of the Buyant River, the right tributary of Khovd River. Integrated analysis of these data gives us an opportunity to carry out further detailed glacio-hydro-climatic modelling.