Impacts of climate change and glacier retreat on water resources and society in the Xinjiang Uyghur Autonomous Region

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The Xinjiang Uyghur Autonomous Region is the area on Earth which is most remote from any ocean and the annual precipitation is only 50 mm. Water availability for e.g. agriculture, water supply, and hydropower production is limited in this area. The area has ~20 000 glaciers and they are the main source for water resources. However, since the 1950s, the glaciers are continuously retreating by 20-30%, and result reductions runoff in the lower reaches of some rivers. In this study, we use a widely used hydrological model (HBV) with a glacier retreat module to study the impacts of climate change and glacier retreat on water resources. An ensemble of climate projections up to the end of the century will be explored and the WEAP (Water Evaluation And Planning) model system will be used to analyze impacts on the society.