On Figure S1 illustrate a longitudinal profile from fan to a glacier, made based on map 1:25000 scale.
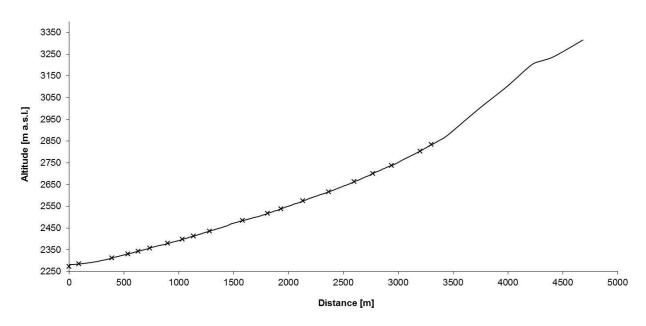

Figure S1. Aksay longitudinal profile with mark of transversal profiles

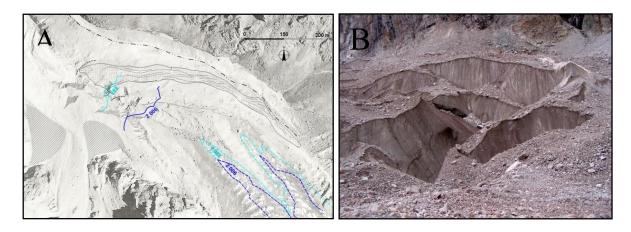Figure S2 show a Aksay glacier retrea (A) t and view on front of Aksay glacier (B).

Figure S2. A. Aksay glacier retreat B. A front view on Aksay glacier tongue

On Figure S3 A show a bathymetry of lake under Uchitel glacier (20016) and on B erosion
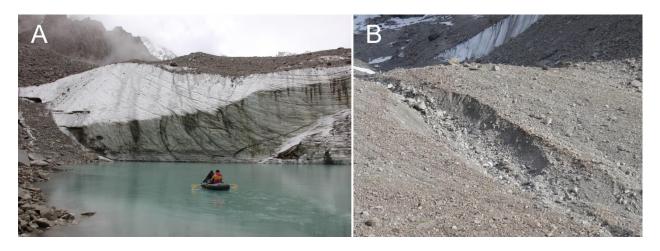
Figure S3. A. Bathymetry of lake under Uchitel lake B. Erosion in the place where were a surface outflow from the lake

For detail profiles in the area of protecting dam we used a survey from UAV (height of fly 50 m). On Figure S4 and S5 shown a results extracted from 200 images in Agisoft software.
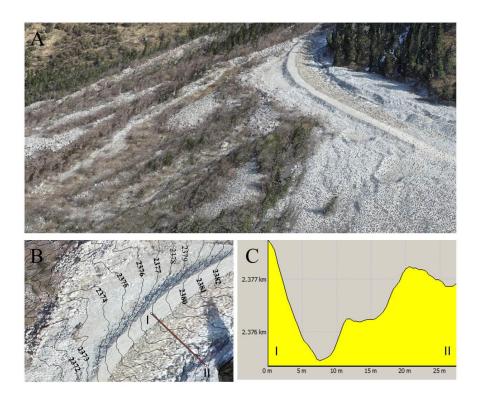

Figure S4. A. 3D model of Aksay cone and dam B. Cross-section (I-II) in the top part of protective dam C. Cross-section (I-II) created in Agisoft
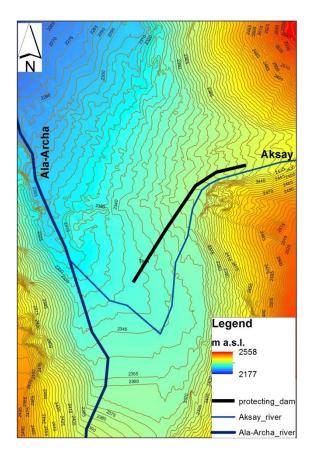
Figure S5. Aksay cone DEM extracted from UAV (Agisoft software)