Project: Poverty Alleviation by Mitigation of Integrated high mountain Risk

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IAG-BOKU has completed its high-mountain hazard and risk assessment carried out within the framework of the PAMIR project. One particular focus was put on the preparation of broad-scale hazard and risk indication maps for four different types of processes: (1) rock slides and rock/ice avalanches, (2) ice avalanches, (3) periglacial debris flows and (4) lake outburst floods. These maps show a risk indication score for each of the 528 communities in the 98,300 km² study area, including the entire headwaters of the Amu Darya river. Fig. 1 shows the relative abundance of communities assigned each risk indication score class for 15 regions. Fig. 2 illustrates subsections of the final hazard and risk indication maps provided at the scale 1:500,000. The methods and results of the regional-scale high-mountain hazard and risk assessment are presented in a discussion paper submitted to the journal Natural Hazards and Earth System Sciences (NHESS). This article is open for discussion until June 21, 2013 at http://www.nat-hazards-earth-syst-sci-discuss.net/1/1689/2013/nhessd-1-1689-2013.html.
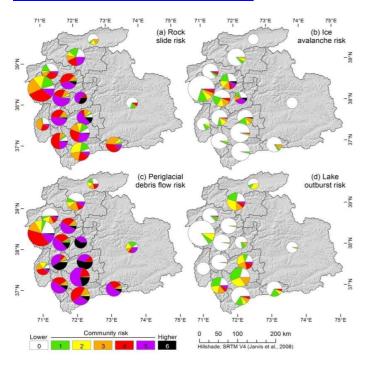

Fig. 1 Community risk, generalized to 15 regions. For each region, the pie chart illustrates the relative abundance of the different community risk indication scores. The size of each chart is proportional to the number of communities it represents.

Contributions to this discussion are highly welcome. Moreover, an article titled "Spatio-temporal development of high-mountain lakes in the headwaters of the Amu Darya River (Central Asia)" was published in the highly renowned journal Global and Planetary Change in April 2013 (http://www.sciencedirect.com/science/article/pii/S092181811300091X).

The purpose of the regional-scale hazard and risk assessment is to provide a reproducible basis for prioritizing communities requiring particular hazard and risk assessment studies and mitigation measures. Consequently, these maps should not be seen as definite hazard and risk maps but rather as conceptual hazard and risk indication maps interpreteable at the scales of communities, catchments or even regions. The appropriate use of these maps requires the knowledge of the asumptions and limitations they are based on.
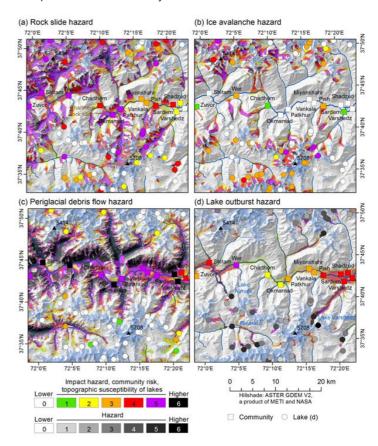

Fig. 2 Hazard, impact hazard, topographic susceptibility of lakes and community risk associated with each process type. (a) Rock slide, (b) ice avalanche, (c) periglacial debris flow, (d) lake outburst flood.

These and more aspects will be laid out in detail in the IAG-BOKU final report to be submitted in early May 2013. This comprehensive report will further contain the detailed description of case studies in the vicinity of the Pyanj and Chon-Alai valleys. Moreover it will include a collection of scientific articles describing in detail the methods and results of the high-mountain hazard and risk analysis and the study on environmental changes observed in and predicted for the high-mountain areas of the Pamir.

The electronic version of this Information Bulletin is available at the following project site: **www.pamir.at**
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