

World Centre of Excellence (WCoE-2017-2020)
Progress Report Form 2017
29 May 2017 to 31 December 2017

1. Short Title of WCoE

Landslide risk assessment and development guidelines for effective risk reduction

2. Name of Institution (Name of leader and email)

Charles University, Faculty of Science & Institute of Rock Structure and Mechanics Czech Academy of Sciences

Prof. Vít VILÍMEK, PhD; RNDr. Josef STEMBERK, PhD. (Deputy Coordinator)

3. List of core members

RNDr. Jan KLIMEŠ, Ph.D. (IRSM CAS)

Mgr. Jan BLAHŮT, Ph.D. (IRSM CAS)

4. Progress report of activities up to 31 December 2017 (up to 30 lines)

In order to meet the goals of the proposal we oriented our activities in 2017 on paleogeomorphological research (Burda et al., 2018) and in the frame of the interinstitutional cooperation (with the WCoE in Florence) we worked on landslide dams in Peru (Tacconi et al., 2018). Our long time lasting research dealing with GLOFs (Glacial Lake Outburst Floods) especially in connection with landslides resulted in the publication focused on the effectiveness of remedial works (Emmer et al., 2018).

Currently we maintain two different databases – for the GLOFs database we reworked the website and we are filling the database with data again. We published a database of megalandslides from volcanic islands for the Atlantic Ocean (Blahůt et al., 2018) and created a web site (https://www.irmsm.cas.cz/ext/giantlandslides/index.php?page=giantlandslides_db) where the inventory data can be viewed.

During the last year we also published report about the WCoE (2014-2017, Klimeš et al., 2017a) and results of the IPL project No. 197 (Klimeš et al., 2017b).

We continued in the capacity building activities through the preparation of the site-specific hazard map of the landslides near the Peruvian town of Carhuaz which was requested by the local authorities; collaborated on a conference in the Senate of the Czech Republic and published a brochure for the Czech citizens which summarize basic geological, historical and legal aspects of the landslide risk reduction.

5. Plan of future activities (up to 30 lines)

To continue the international cooperation with the Florence University another case study from Peru is under preparation – about the landslide dam created after the 1970 earthquake in Ancash region (Peru). The other research activities will be focused on the relation between precipitation and landslides. In this case we will incorporate one specialist from the branch of meteorology and work on the methodology of precipitation estimation in cases when rain gauges are too far from the landslide area. Another planned activity is about landslides in the area of brown coal mining, where significant thick overburden are located (inside our country).

We are also preparing a thematic issue of the Landslides journal entitled “Community participation for landslide disaster risk reduction: experience and best-practices in different social and cultural environments”. We hope that this thematic issue will contribute to the goals of the Sendai Partnership for landslide disasters risk reduction.

6. Publication (in Landslides, proceedings, meeting reports, or WEB)

Emmer A., Vilímek V., Zapata M.L. (2018): Hazard mitigation of glacial lake outburst floods in the Cordillera Blanca (Peru): The effectiveness of remedial works. **Journal of Flood Risk Management**, 11, 5489-5501.

Burda J., Veselý M., Řehoř M., Vilímek V. (2018): Reconstruction of a large run-out landslide in the Krušné hory Mts. (Czech Republic). **Landslides**, DOI 10.1007/s10346-017-0881-0.

Blahůt J., Klimeš J., Rowberry M., Kusák M. (2018): Database of giant landslides on volcanic islands - first results from the Atlantic Ocean. **Landslides**. doi: <https://doi.org/10.1007/s10346-018-0967-3>

Klimeš J., Hartvich F., Tábořík P., Blahut J., Briestensky M., Stemberk J., Emmer A., Vargas R., Balek J. (2017a): Studies on selected landslides and their societal impacts: activity report of the Prague World Centre of Excellence, Czech Republic. **Landslides**, 14: 1547-1553.

Klimeš J., Stemberk J., Blahut J., Krejčí V., Krejčí O., Hartvich F., Kysel P. (2017b): Challenges for landslide hazard and risk management in ‘low-risk’ regions, Czech Republic—landslide occurrences and related costs (IPL project no. 197). **Landslides**, 14, 771 – 780.

Tacconi C., Vilímek V., Emmer A., Catani F. (2018): Morphological analysis and features of the landslide dams in the Cordillera Blanca. **Landslides**, DOI 10.1007/s10346-017-0888-6.