IPL Project 212 - Annual Report Form

Period of activity under report:
1 January 2023 to 31 December 2023

1. Project number and title

IPL Project 212

The construction of a global database of giant landslides on oceanic island volcanoes

2. Main project fields

Select the suitable topics. If none are suitable, you may add new a field.

- (1) Technology development
   Hazard mapping, vulnerability, and risk assessment
- (2) Targeted landslides: mechanisms and impacts
   Catastrophic landslides
- (3) Capacity building
   Collating and disseminating information/knowledge
- (4) Mitigation, preparedness, and recovery
   Preparedness

3. Name of the project leader

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Core team members: Dr. Jan Blahůt PhD and Dr. Jan Klimeš PhD

4. Objectives

The fundamental objectives of the project are:

- To construct the first global database of giant landslides on volcanic islands
- To investigate spatial and temporal patterns of landsliding and landslide reactivation
- To assess the hazard and potential risks posed by these giant landslides

5. Study area

The database will include information about giant landslides on volcanic islands across the globe.

6. Project duration

2016 – 2023

7. Report

7.1 Progress in the project

The global database of giant landslides on volcanic islands can be downloaded from the project webpage either as a spreadsheet or as a kml file for integration in a number of geospatial programs including ArcGIS and Google Earth (Institute of Rock Structure and Mechanics, 2024). Over the past twelve months, the scientific literature pertaining to giant landslides on volcanic islands has continued to be reviewed and the database has been updated as appropriate. Since the beginning of this project our activities have been presented in two manuscripts published in the journal Landslides and one chapter published in the book series Progress in Landslide Research and Technology. The first manuscript outlines construction of the georeferenced database, which was made on the basis of an exhaustive search of the scientific literature coupled with insights gleaned from altimetric and bathymetric models (Blahůt et al., 2018); the second manuscript uses the georeferenced database in order to measure the basic morphometric characteristics of each landslide and interrogate relationships between potentially significant morphological variables (Blahůt et al., 2019); and the book chapter illustrates the global distribution of giant landslides on volcanic islands and discusses the main benefits of landslide inventories and thematic databases (Rowberry et al., 2022). These manuscripts have been read widely by the landslide research community, with the SpringerLink website indicating 760 accesses and 19 citations for the first manuscript, 1 261 accesses and 37 citations for the second manuscript, and 4 962 Accesses and 3 citations for the recently published chapter in Progress in Landslide Research and Technology.

7.2 Planned future activities or statement of completion of the project

The main objectives outlined in the original proposal have been fulfilled and, therefore, the project can be regarded as having been completed successfully. Consequently, the project team does not anticipate any further activities in the foreseeable future.

7.3 Results

Institute of Rock Structure and Mechanics, 2023. *Database of Giant Landslides on Volcanic Islands*. Institute of Rock Structure and Mechanics, Czech Academy of Sciences: https://www.irsm.cas.cz/ext/giantlandslides [last accessed 1 July 2024]

Blahůt, J., Balek, J., Klimeš, J., Rowberry, M., Kusák, M., Kalina, J., 2019. *A comprehensive global database of giant landslides on volcanic islands*. Landslides, v. 16, p. 2045-2052. https://doi.org/10.1007/s10346-019-01275-8

Blahůt, J., Klimeš, J., Rowberry, M., Kusák, M., 2018. *Database of giant landslides on volcanic islands - first results from the Atlantic Ocean*. Landslides, v. 15, p. 823-827.

https://doi.org/10.1007/s10346-018-0967-3

Rowberry, M., Klimeš, J., Blahůt, J., Balek, J., Kusák, M., 2022. *A global database of giant landslides on volcanic islands*. In: Sassa, K., et al. (eds.), Progress in Landslide Research and Technology, Vol. 1, Issue 1, p. 295-304. https://doi.org/10.1007/978-3-031-16898-7_22

Rowberry, M., Klimeš, J., Blahůt, J., Balek, J., Kusák, M., 2022. A global database of giant landslides on volcanic islands. ICL-KLC Conference, 22-25 November 2022, University of Kyoto, Japan.