Supplementary Materials

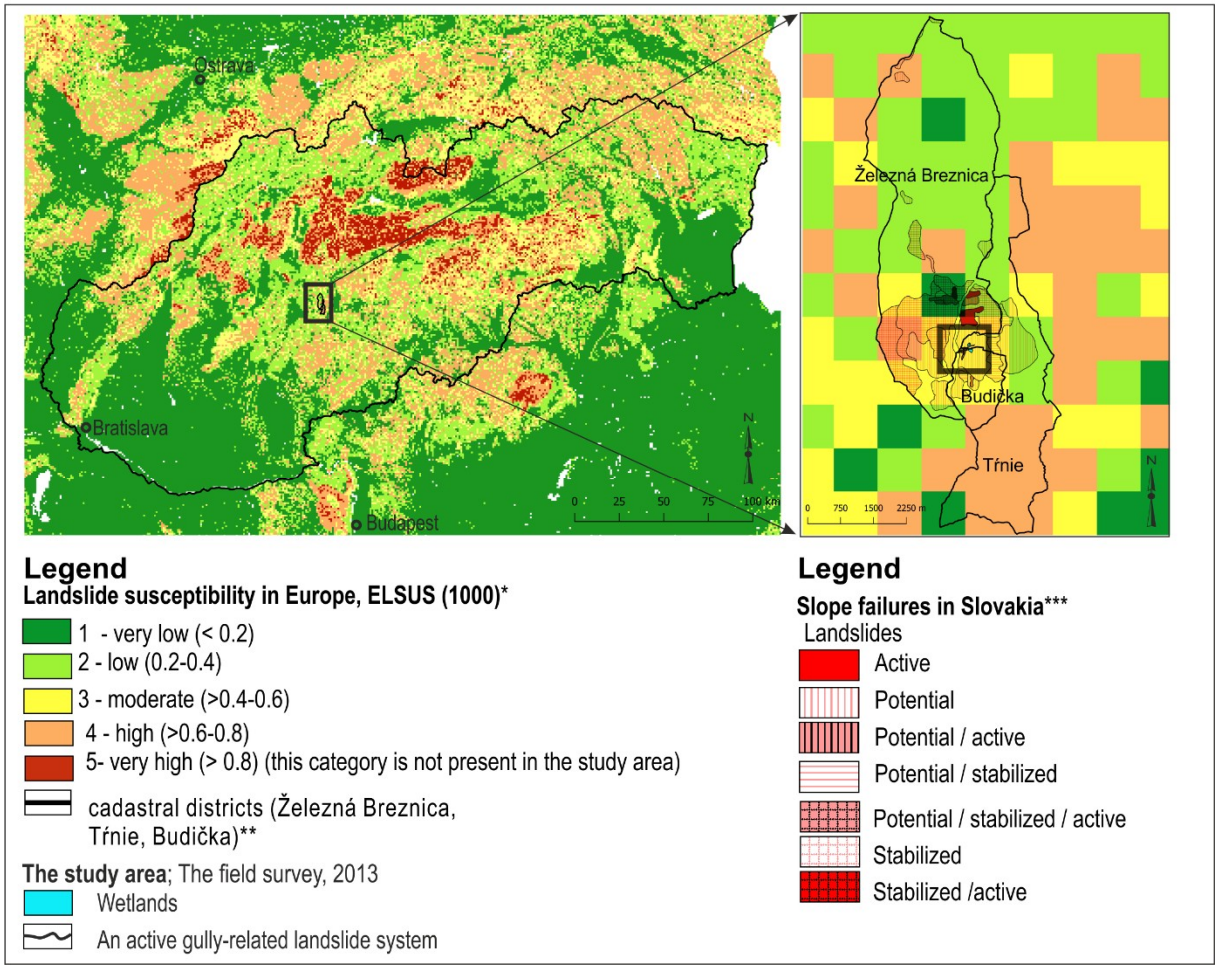


Figure S1. The study area in Slovakia and its location in ELSUS (1000) map with categories of landslide susceptibility, modified after [29] and the comparison with slope failures—landslides characterized in the national database of slope failures of the Slovak Republic, modified after [27, 28].

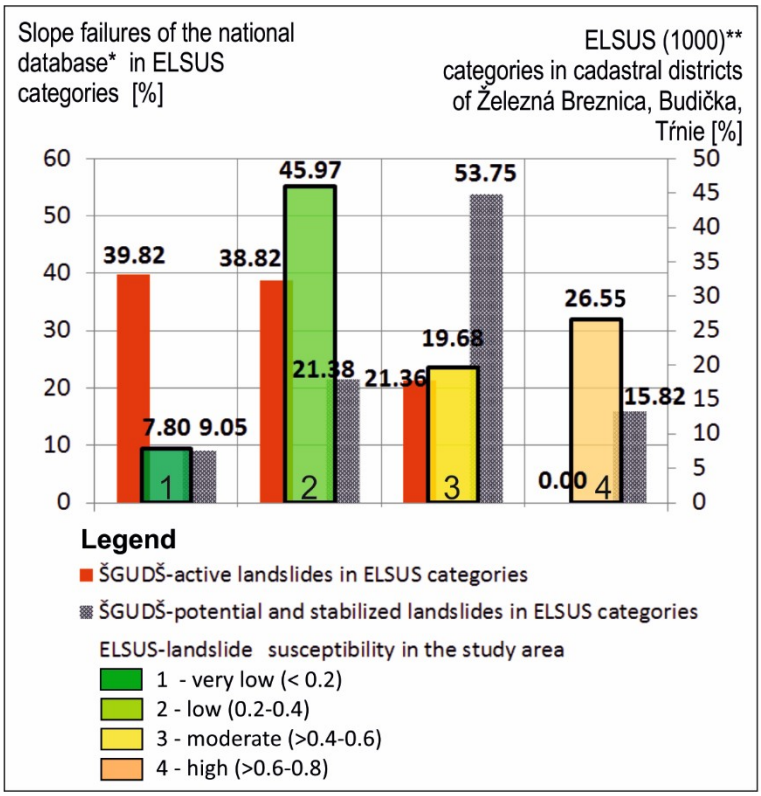


Figure S2. Categories of slope failures derived from the national database of the Slovak Republic, modified after [27, 28] within categories of landslide susceptibility derived from the ELSUS (1000) map, modified after [29] in the cadastral districts of Železná Breznica, Budička, and Tŕnie.

Data computation and workflow S3. The LiDAR, RPAS and SfM CRP data processing workflow

LASTools

- Lasnoise

lasnoise -i Landslide-LAS \landslide_raw\ *.laz ^

-step_xy 2 -step_z 0.5 -isolated 5 ^

-classify_as 7^

-odir Landslide-LAS \landslide_denoised -olaz ^

- Lasground_new

Lasground_new -i Landslide-LAS \landslide_denoised\ *.laz ^

-ignore_class 7 ^

-natural -ultra_fine ^

-compute_height ^

-odir Landslide-LAS \landslide_ground -olaz ^

- Lasheight_classify

Lasheight_classify -i Landslide-LAS \landslide_ground\ *.laz ^

- classify -ground

-drop below 0 above 0.1 ^

-ignore_class 7 ^

-odir Landslide-LAS \landslide_hieght -olaz ^

- Las2dem

las2dem -i _ground\ _height\ *.laz ^

-step 0.15 -use_tile_bb ^

-odir Landslide-LAS \landslide_dem -oasc ^

Quantum Geographic Information System 3.2.3. (QGIS) and in the System for Automated Geoscientific Analyses 2.3.2 (SAGA) - selected modules.

- Module of Slope, Aspect, Curvature. Terrain curvature, Maximal curvature.

saga_cmd ta_morphometry 0 [-C_MAXI <str>]

- Module of Valley Depth and Basic Terrain Analysis. The valley depth and the topographic wetness index.

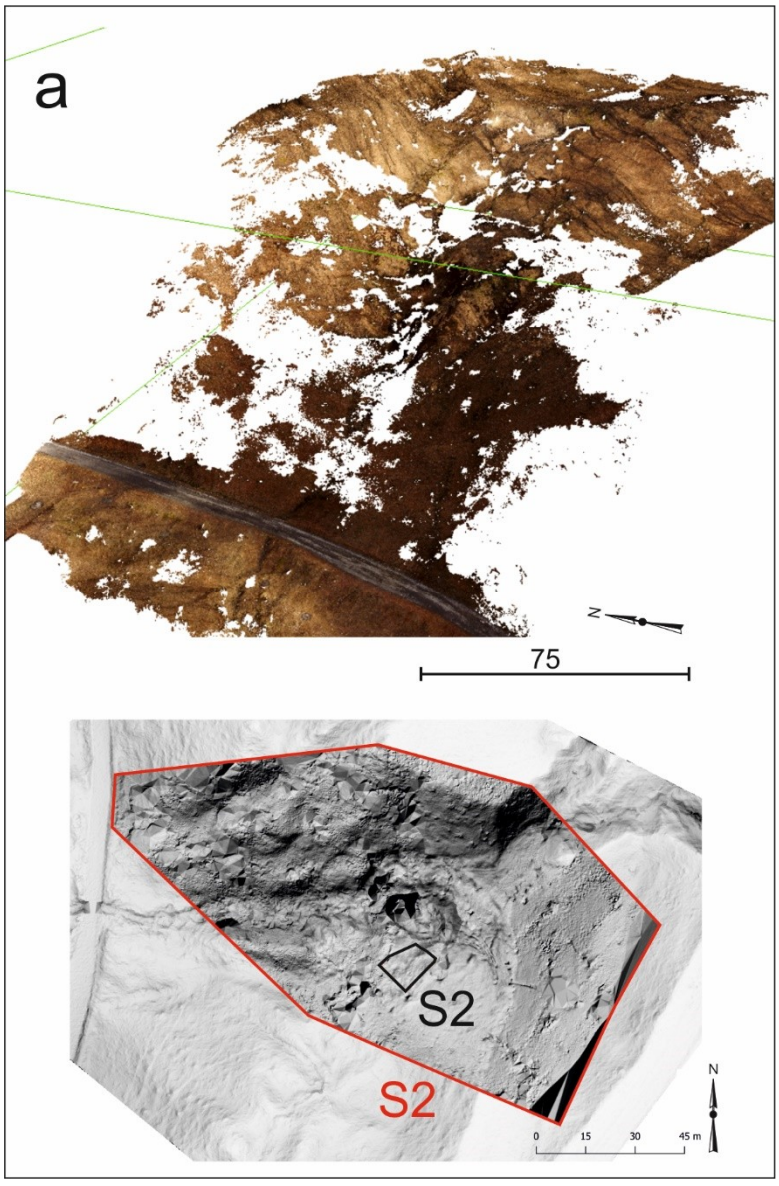
saga_cmd ta_compound 0 [-WETNESS <str>] [-VALL_DEPTH <str>] [-RSP <str>] [-THRESHOLD <num>]

- Module of Sky View Factor. Sky View Factor.

saga_cmd ta_lighting 3 [-SVF <str>] [-NDIRS <num>]

- The calculation of basic micro-scale landforms characterizing the complex gully-related landslide

("Maximal Curvature@1" * "skyviewfactor@1") - "valleydepth@1"


a
N
75
S2
S2
N
0
15
30
45 m

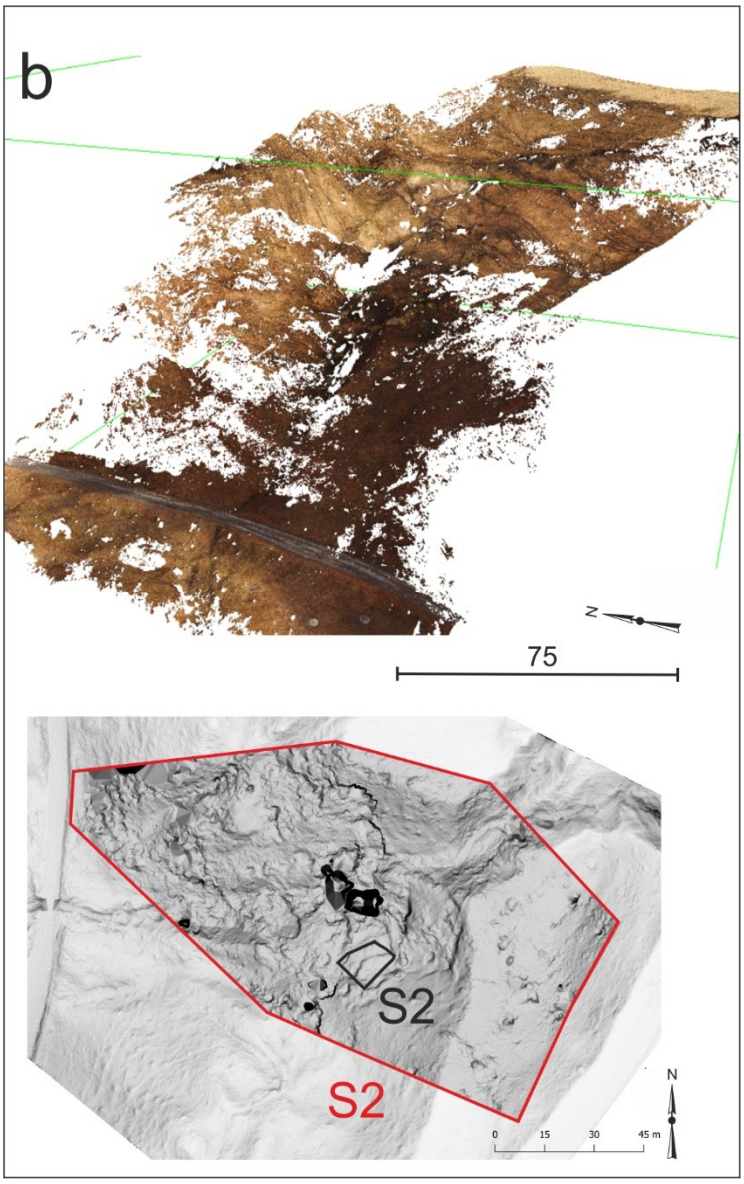


Figure S4. (**a**): Data gaps in point clouds acquired by the RPAS technology. Point clouds were filtered with the ground points classification; Sky View Factor highlights terrain discontinuities and obstructions in digital model derived from ground classified point clouds with more data gaps; (**b**): Point clouds were filtered with the ground points classification using the parameter from the height classification (drop points of the ground within interval from 0 m to 0.1 m); Sky View Factor highlights terrain discontinuities and obstructions in digital model derived from ground classified point clouds with less data gaps.