

We would like to thank the referee for the time and effort they put in to review the first version of our manuscript. Their constructive comments enabled us to improve the quality and clarity of the manuscript. Actually, according to the suggestion of the RC1, we redefined our units into the geomorphic units which are more reasonable. We have checked the grammar and spelling errors of the manuscript. Please find our answers to the points raised below.

Q1: Line 15 (in the Abstract): „...topographic characteristics of different units comparatively faithfully, which is being increasingly extensively...” Here, you used too many, useless adjectives; you should rephrase this sentence.

A1: Thank you for your comments. We have rephrased this sentence. Please see **lines 11-14**:

In contrast to the grid units used in traditional spatial analyses, geomorphic units have explicit geomorphological and environmental implications and faithfully capture the topographic characteristics of different units; thus, geomorphic units have been applied in investigations of natural hazards, ecological processes and environmental impacts.

Q2: To enable more researchers to focus more conveniently on the subject matter to be addressed itself, rather than being caught up in the slope unit delineation”. This sentence does not have clear meaning for me, please rephrase.

A2: Thank you for your comments. We have rephrased this sentence. Please see **lines 16-18**:

This study enables more researchers to focus on hazard susceptibility assessments based on geomorphic units rather than the complicated process of geomorphic unit delineation.

Q3: Line 30: The sentence „Due to the intense tectonic activity and complex topography of the eastern edge of Tibetan Plateau, the deformation and failure of steep slopes are prone to slide” is not related to the previous one. It would be better to find another place and move this sentence, for example after the Line 55.

A3: Thank you for your comments. We have moved this sentence as your suggestion. Please see **lines 52-54**.

Q4: Line 82: What means „a relative height difference of more than 1000 m”? Is it the relative elevation between the top and the bottom of the canyon? Be more concise and use the specific terms for altitude values (either relative altitudes, or altitude a.s.l.).

A4: Thank you for your comments. We have rephrased this sentence to make it concise. Please see **lines 77-79**:

The crisscrossing and dense distributions of rivers have produced intense river erosion and deep canyon landforms, with relative elevations greater than 1000 m accounting for 81.5% of the total area (Li, 1989; Bian et al., 2018).

Q5: Lines 85-86: You describe here the climate conditions in the study area „with dry

winters, wet summers and obvious wet–dry seasons”. This description is very imprecise and needs more details about the climate conditions at regional and local scales.

A5: Thank you for your comments. We have added details and rephrased it at regional and local scales. Please see **lines 81-83**:

The eastern edge of the Tibetan Plateau is situated in a humid and temperate climate zone, and the average annual temperature is approximately 5°C. There is abundant rainfall, with annual precipitation greater than 500 mm. The precipitation in summer is 50% of whole year. The valley areas form a hot and dry climate affected by foehn wind.

Q6: the description of the landslide types (line 90) explaining that „They are mostly fast-moving slide-type and flow-type movements, and rapid-moving landslides are also abundant”. This is, again, very imprecise and needs more clarification of the terms referring to landslides you used.

Multiple landslide types exist, depending on their type of movement. You should be more explicit and clearly mention in the description all the types of landslides occurring in your study area.

A6: Thank you for your comments. We have added the detailed description of all the types of landslides occurring in the study area. Please see **lines 86-89**:

The types of landslides in the study area are precipitation-induced landslides and earthquake-induced landslides. Rainfall-induced landslides are subdivided into the plane slip type, wedge outburst type, and structural collapse type. Earthquake-induced landslides are subdivided into the interlayer detachment type, brittle shear type, and brittle tension type (Liu, 2014).

Liu C. Genetic Types of Landslide and Debris Flow Disasters in China, Geological Review, 60:4, 858-868, DOI:10.16509/j.georeview.2014.04.017, 2014.

Q7: Lines 110-133: Here you mentioned the 16 conditioning factors taken into consideration to assess the landslide susceptibility. But, how did you choose to analyze the type and number of these conditioning factors? For different landslide types you should consider to analyze different conditioning factors. A conditioning factor favoring a type of landslide will not necessarily favor other landslide type. Knowing the different landslide types occurring in the study area is therefore essential, to select the conditioning factors for each landslide type that should be included into the susceptibility analysis.

A7: Thank you for your comments. For different landslide types we should consider to analyze different conditioning factors. At the beginning we selected 30 influencing landslide factors, according to the existing study and landslide type in the study area. Finally, the results of 16 influencing factors are significant. Please see **lines 111-114**:

At the beginning we selected 30 influencing landslide factors, according to the existing study and landslide type in the study area. The results of 16 influencing factors are significant. It shows as the reference in Table 1.

Q8: Lines 270 and 285: Here you mentioned the „actual observed landslide points”. I understand that the landslides in your analysis are located as points on your map. How did you chose the location of the point, is it within the centre of the the landslide area? All grid units statistics are conditioned by the way in which you located the landslide point on the map. A particular grid unit will contain, or not a landslide point, depending on how this point was located on the map. You should provide detailed information about the location of landslide points and how the location of these point

A8: Thank you for your comments. We have added the information about the location of landslide points and how the location of these points. Please see **lines 277--279**:

In addition, the location of the actual observed landslide points is the trailing edge of the landslide according to the “The standard specification of geological hazard risk survey and assessment in China”. The actual landslide points were obtained from the fieldwork project of the China Geological Survey.