

## ***Interactive comment on* “The influence of land use and land cover change on landslide susceptibility: A case study in Zhushan Town, Xuanen County (Hubei, China)” by Lixia Chen et al.**

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Dear Referee, Thank you for your comments concerning our manuscript. These comments are all valuable and helpful for revising and improving our paper. Please note that the revised manuscript has been attached in supplement file. The main corrections in the paper and the point-by-point responses to the your comments are as following (the page number and line number in this letter refer to the revised ms):

Comment 1: Ln 21: change “LUC” to “LULC”? Responses: The abbreviation of “land use and land cover change” is “LUCC”, whereas “LUC” is the abbreviation of “land use and land cover”. So they are a little bit different. Here, the term we used in this line is

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“land use and land cover”, so we think “LUC” is right. Anyway, we are grateful for your comment.

Comment 2: Ln 39: change “in the literature” to “in the literatures”. Responses: We changed “in the literature” to “in the literatures”. (see page 2 line 38)

Comment 3: Ln 46: change “LUCC often imply” to “LUCC often implies”. Responses: We changed “LUCC often imply” to “LUCC often implies”. (see page 2 line 45)

Comment 4: Ln 84: change “Zhushan County” to “Zhushan Town”? same in Ln 522 and Ln 623. Responses: We changed “Zhushan County” to “Zhushan Town”. (see page 3 line 83)

Comment 5: Ln 87: use other notation for “after 2000”. Responses: Thank you for this comment. Due to another reviewer suggested us to compress some contents, I have deleted this part already in the revised ms.

Comment 6: Ln 93: change “land use and land cover change” to “LUCC”? Responses: We changed “land use and land cover change” to “LUCC”. (see page 4 line 90)

Comment 7: Ln 95~96: delete “The study was . . . . . China”? Responses: Thank you for this suggestion. We have deleted “The study was . . . . . China”.

Comment 8: Ln 104: delete “center” ? Responses: We deleted “center”.

Comment 9: Ln 128: use other notation for “the 209 national road”. Responses: Thank you for your comment. We changed “the 209 national road” to “No. 209 national road”. (see page 5 line 124). This means the number of the road is 209. This notation is very commonly used in China.

Comment 10: In the Table 1, the No. 5 source is “Google”. It needs to add reference or website about Google Earth software. The similar situation also exists about the ENVI software and eCognition software. You should add reference or website about it at the position of the first appearance (i.e. page 7 line 158 and line 164). Responses: Thank

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you for this comment. We are sorry for this carelessness. We have added the websites for these software, including Google Earth (see Table 1 in page 6), ENVI (see page 7 line 155) and eCognition software (see page 7 line 161).

Comment 11: Ln 267 change “literature” to “literatures”. Responses: We changed “literature” to “literatures”. (see page 11 line 258)

Comment 12: Ln 317: change “seven” to “eight”? Responses: I think you mean the Ln 319, because there is no the word “seven” in this line, only in line 319. We changed “seven” to “eight” in this line. (see page 13 line 310)

Comment 13: Ln 516: change “25m” to “25 m”. Responses: I think you mean the Ln 518, because there is no the word “25m” in this line, only in line 518. We changed “25m” to “25 m” in this line. (see page 26 line 511)

Comment 14: Ln 522: use other notation for “the national road G209”. Responses: Thank you for this comment. We have changed “the national road G209” to “ the No. 209 national road”. This comment is similar with comment 9, so our answer is the same. We hope this notation can satisfy you. (see page 26 line 517)

Comment 15: Ln 559: change “(Schmaltz et al., 2017 Galve et al., 2015)” to “(Schmaltz et al., 2017; Galve et al., 2015)”. Responses: We changed “(Schmaltz et al., 2017 Galve et al., 2015)” to “(Schmaltz et al., 2017; Galve et al., 2015)”. (see page 29 line 554)

Comment 16: In the discussion section, page 29 line 577, you said “two landslides (i.e., 1# and 2# landslides) occurred in the period from 16th to 26th in June 2013, triggered by a heavy rainfall event with a total rainfall of 149.1 mm from 6th to 9th”. During this period (from 16th to 26th), it was rainy only from 6th to 9th, or other days also were rainy. If were, which day? This is not very clear to me. You should clarify this point because it is useful to help understand the rainfall-induced landslides in this area. Responses: Thank you for this suggestion. Just like Fig. 14 (b), during the period from

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6th to 26th in June 2013, only three days were rainy (i.e., 6th, 9th and 10th). The rainfall of these three days were 94.7 mm, 48.2 mm and 6.2 mm, respectively (the numbers can be seen in the figure) and the total rainfall was 149.1 mm. There was not rainy in other days. So we think the two landslides were triggered by this 149.1 mm rainfall event. In the revised manuscript, we added several sentences to clarify this situation. (see page 29 line 570-572)

Comment 17: In the 3.2 section, authors described the general characteristics of the landslides. According to the contents in your study, especially in the discussion section, the shallow landslides are rather important for your study. So if possible, please kindly add some descriptions about the depth of the landslide. For example, the depths of landslides in the area rang from .. m to .. m, among which the number of landslides with depth from .. m to .. m is ... Responses: Thank you for this comment. We think this is very useful for us. According to your requirement, we added some contents in this section to describe about the depth of landslides in the study area. As seen in the new contents (see page 19 line 408-411), the depths of most landslides range from 1 m to 10 m, and the landslides with depth of less than 5 m account for more than 50% of the total landslides, so shallow landslides are truly important part of the landslides in the area.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-203/nhess-2019-203-AC1-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-203>, 2019.

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