

Nat. Hazards Earth Syst. Sci. Discuss., author comment AC3
<https://doi.org/10.5194/nhess-2022-176-AC3>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Reply on RC1

Hans-Balder Havenith et al.

Author comment on "Earthquake-induced landslides in Haiti: analysis of seismotectonic and possible climatic influences" by Hans-Balder Havenith et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-176-AC3>, 2022

Reply to Rev 1 comments :

"Authors report the landslides caused by Aug. 14, 2021 earthquake (Mw 7.2) in Haiti and discuss the distributional and dimensional pattern with the landslides caused by Jan. 12, 2010 earthquake (Mw 7.2) in Haiti. Seismic, tectonic (briefly) and climatic (rainfall) perspectives are also discussed to explain the role of these factors in landslide occurrence. Though such types of base datasets are vital to understand the relative influence of earthquakes and atmospheric-climatic phenomena (hurricanes), there are following issues, which can further simplify the MS;

1) The epicentres in both the earthquake events; Aug. 14, 2021 earthquake (Mw 7.2) and Jan. 12, 2010 earthquake (Mw 7.2) are related to Enriquillo-Plantain-Garden Fault (EPGF), which is crucial in the genesis of these earthquakes. Though authors have described the EPGF briefly in line no. 60-70, page no. 3, a thorough tectonic description of the EPGF can be presented as supplementary annexure.

Answer by HBH (main author): A more detailed description of the EPGF tectonics is being prepared and will be included in the revised version of the manuscript.

2) In Fig. 7, authors have presented climatic, particularly rainfall spatial variability. Fig. 7bc

showing October rainfall variability follow the hypothesis relating Oct. 2016 hurricane with the landslides generated in Oct. 2016 and then reactivated at larger scale in 14, 2021 earthquake (Mw 7.2). However, it would be better if the authors present rainfall spatial variability of each month to justify the relative dominance of Oct. month particularly in 2016.

Answer by HBH (main author): well, we possess yearly averaged data and we presented them - presenting

maps for all months would definitely exceed the number of pages allowed for the manuscript.

However, we can include in the annex the August 2021 prec stats map marked by the Grace event - for comparison.

3) Authors have mentioned the landslide volume in absolute numbers in several statements throughout the MS. Please explain how you determined the volume of these landslides?

Answer by HBH (main author): Thanks for this comment, indeed, we should have specified that we estimated

these volumes according to equations presented in Havenith et al. (2015) in Geomorphology. This information will be added

(plus example calculation, thickness estimate and related volume estimate).

Sincerely yours

HB Havenith, main author