Reply on RC2

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-AC4, 2022

Dear reviewer,

please, find below some more detailed answers to your comments (also to those included in the annotated manuscript):

The authors present a very detailed paper, based on numerous estimations derived from the modeling of recorded processes. In a multi-hazard framework, such evaluations are essential for developing proper disaster risk reduction measures, and the applied character of the paper enhances its importance, besides its fundamental one.

The paper is generally well structured, but there are sometimes paragraphs which should better fit other chapters (especially related to the methodology and discussion-based ones, as outlined in the annotated .pdf). As well, sometimes the paper has paragraphs which are difficult to be followed, due to the length of the sentences and the permanent comparisons between events.

1) Sometimes, the authors are using sentences looking like a report (e.g. pages 6-7).

Answers by HBH (main author): yes, we will revise some lengthy paragraphs and split them.

2) The graphics part is conclusive, but the choice of close colours in landslide delineation might not be the best one.

Answers by HBH (main author): as indicated in the quick answer part - we tried many combinations. We'll try again, but

as we present multiple inventories, some compromise has to be made.

3) Also, field pictures (besides the RS ones) with debris flows (as recognized by the authors as being the most numerous landslides triggered by the 2021 earthquake; instead, only rock falls are shown) would enhance the reader's overall image.

Answers by HBH (main author): Certainly you are right, but, here, we cannot provide any

further answer than the one quickly given - only roads in the affected are could be visited after the earthquake - and those were mostly affected by rockfalls. Debris slides occurred in ravines that were not accessible and cannot be visited anymore due to restricted access to the area for security reasons (closed due to riots).

See below answers to your main comments (not including simple corrections) in the annotated manuscript:

R1: Numerous paragraphs, especially in the second half of the intro, seem more suitable to "data&methodology" chapter.

HBH: We will check this issue and move parts to the next section.

R2: Streets reopening? Was this the reason?

HBH: We will specify that we started the landslide mapping task due to the evidence that many landslides had occurred in the target area.

R3: A rough size estimation would be helpful.

HBH: we'll specify that landslides typically smaller then 500 m2 or ~2000 m3 could not be identified (see also comments in size-frequency part).

R4: diregarding ... : Is there a reason for this approach? If so, it should be stated.

HBH: we'll specified that these effects cannot be assessed as the frequency of aftershocks exceeds by far the one of available new remote imagery. Also, most aftershocks had a M<4.5 .. which means that the likelihood for landslide triggering is small. This point will be more specified.

R5: What about the initiation of first time failures or reactivations of former landslide deposits, in areas not affected by the seismic shaking?

HBH: indeed, we did not map outside the 2010-2021 target zone, but at least over the area affected by the 2010 event and not by the 2021 one ..we could not detect any new landslides. We'll specify this point.

I think, above we answered all major comments of reviewer 2.

yours

Hans-Balder Havenith, main author.