

Interactive comment on “Constructing a complete landslide inventory dataset for the 2018 Monsoon disaster in Kerala, India, for land use change analysis” by Lina Hao et al.

Anonymous Referee #2

Received and published: 5 August 2020

The proposed manuscript intends to provide a complete landslide inventory for the 2018 Moonsoon disaster in Kerala, India, by merging two already available landslide inventories, improving upon it by verifying and correcting the available information using GoogleEarth images and satellite data. Landslide inventories are essential for susceptibility and risk mapping, therefore the presented dataset has the potential to be significant and useful. The overall structure of the article is repetitive and sometimes difficult to follow. Although authors repeat information, they don't present it in a clear way, raising questions to the reader that are answered ahead. One example is the methods section, where only at the end it is clear how the final inventory was able to accommodate both initial datasets and how errors were identified and field data

C1

helped in deciding if it was landslide or not. Methodology is presented initially in terms of the encountered challenges, but instead should be presented as a final methodology that can deal with cataloguing challenges. This needs to be improved. English is sound but sometimes difficult to follow as is too colloquial for a research article. State of the art is incomplete in terms of literature about the specific types of landslides (shallow/debris flows) and trigger event (rainfall). Also, alongside with the inventory mapping objective, authors try to provide a susceptibility assessment of the landslides without stating it clearly and without a sound methodology. They provide a section - land use attributes, which has no dataset available and comment in intersecting both datasets (landslides inventory and land use). This is also confusing when dealing with a MS about landslide inventorying. This analysis belongs to a dedicated susceptibility assessment paper. The methodology itself is not new, but although primarily based on the merge of already available catalogues, it completes and verifies the first information. But only the use of the Google images is explained, all about the satellite images is disregard and only mentioned superficially. Also, no additional information on dates and type of images (e.g. resolution) both from Google Earth and satellite is provided. This is important for the discussion and the challenges encountered. About the inventory itself, authors propose to catalog only the initial fail called landslide scarp. But this is very difficult to assess in shallow landslides. The landslides types occurred in Kerala seem to belong to the type shallow landslides/debris flows, which is common in rainfall triggered landslides, but authors to not comment on how this may affect the proposed methodology. Also, the inventory consists in only points, but polygons were generated to give the information on area, for example. The polygons could have been provided as well as part of the dataset, enriching it. I would suggest authors to look for specific literature on rainfall landslide inventories to answer for these questions, particularly in soil-slips and shallow landslides. This is also important for the discussion were authors claim small landslides could not be mapped.

Overall advice is to reformulate the manuscript keeping the methodology simple and clear and only about the inventory mapping, discussing errors and uncertainties inline

C2

with literature review.

Dataset: The dataset is new, because it merges and verifies 2 already available landslide inventories, although it is not clear if the original datasets are freely available. Shapefile metadata should be filled up. What are files Kerela landslides.mid and .mif? Could not open them. A document stating what the different files are should be provided.

Technical corrections: Figure 6 – there are no landslides and markers are the same in both images Figure 8 – There is no landslide. Landslide scar is located right an up from both the identified polygon and pinpoint. Figure 9 – One can not infer anything from the images – field work? Caption needs to be improved.

Please also note the supplement to this comment:

<https://essd.copernicus.org/preprints/essd-2020-83/essd-2020-83-RC2-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-83>, 2020.