

Comments

Comment from editor

Firstly, I kindly ask you to consider ALL of the reviewer comments with the same rigour. Both of the referees argued that the manuscript needs a revision with respect to the overall accessibility and reading fluency. This specifically includes the introductory section (section 1.1), as mentioned in both of the comments of referee #2. The current version, however, still lacks in organisation and proper referencing.

Reply: Now all the comments from the referees are addressed. I apologize for the previous revision as it was indeed not satisfying. I had problems to access many materials due to a change in my working place. Now all maps were remade from scratch. I also tried to rewrite many parts of the manuscript and added a new discussion section.

Secondly, lots of the material presented is not supported by either references or an indication whether or not it is a result of your own studies, examples include section 3 (from where exactly do you see that the reconstructed houses are governmental?). Also, to give another example, information in Line 141 is fragmentary: “The earthquake triggered a total of 1597 landslides in the watershed, which crashed four hostels, killing ten.” Here information is missing: “resulting in ten lives lost” or similar could be an alternative sentence; moreover, it is not clear from which source the number of landslides comes from. Moreover, information such as the “national park was closed due to high landslide threat” need proper referencing. Further, “In May 2009 the 7.3 km long Longxi tunnel (Figure 1) was completed for the Duwen Highway, which greatly helped disaster relief and reconstruction by reducing travel time greatly” – apart from the grammatical issues, which is the source here to prove that this road section “greatly helped” disaster relief and reconstruction? These examples (and there are many more in this manuscript) illustrate nicely what was originally mentioned by the referees as the manuscript needs to be re-organised and “in many phrases, authors provide facts, information, or ideas, but without supporting sources as to where those ideas or facts came from”. Please carefully solve this issue!!!

Reply: Many descriptions in section 2 and 3 were from field investigation and interviewing local authorities. Fragmented sentences were rewritten, and the source of claims (builders and the national park status) were described as by interviews. Descriptions that we did not have solid proof were removed, such as "...which greatly helped disaster relief and reconstruction by reducing travel time greatly"

Thirdly, if referees kindly ask you to add information to Figures, such as the mentioned measured grid and the north arrow, why did you not follow this request throughout the entire manuscript? Your figure captions and table headers are exceptionally short and need to be made such that your figures and tables are self-standing. In other words, if a reader were to read the figure caption and the table header, look at the figure and the table, but not have the rest of the text from the paper, would they be able to understand what is written?

Reply: These figures are now remade and the captions are extended.

Fourthly, as indicated by referee #1, the manuscript would gain in a discussion section where most of the findings are mirrored against the material from other studies published (the international literature requested by the referees) – here it is also highly recommended not only to follow those works exemplified by the referees but also to search own ones (and to my knowledge there are many available even with one of the co-authors as contributor), please carefully re-check available literature.

Reply: A new discussion section is added.

Finally, I kindly would like to ask you for a proof reading of your manuscript – at the moment, many sentences are not written in a style formal enough to be suitable for a scientific journal like NHESS. I am not saying the English must be grammatically perfect, but at least to a level that the reviewers (and myself) can understand what is being said scientifically. Moreover, you are kindly

requested to carefully consider the author guidelines when preparing your manuscript, this also includes the reference list which is NOT yet formatted according to the NHESS style.

Reply: Many sentences are now rephrased. NHESS style is now applied in the references.

Once again, please take these concerns serious. I am looking forward to receiving your revised piece of work as soon as possible. Should there any questions arise please feel free to contact me at any time, and please assure that all the co-authors have seen and approved the new manuscript version before re-submission.

Kind regards,

Sven Fuchs (Editor NHESS)

Comments of referee 1

Your comment: Line 68: “The increased debris flow activity lasted for five years”. Do you have an explanation for that (maybe I missed it)?

The sentence means: earthquakes create large amount of mass wasting and loss of vegetation, which amplified the subsequent mass movement activities. The amplification decays as environment recovers.

The introduction was re-written to make this point clear.

Your comment: Line 93: This is repetitive to the previous sentence.

The introduction was re-written.

Your comment: Section 1.3: Is all the description relevant for the paper? It is a bit long.

The study area section was shortened.

Your comment: Line 176 ff and in general: Did the authors consider the usage of any automated change detection approaches for image analysis? For some classes this might have been helpful and faster than digitizing all the features. For example, there are several studies and publications that successfully used such methods for post-earthquake damage assessment.

We considered using automated method. Due to the limited quality of our data (e.g. Spot 5 image), large areas of bare surfaces created by landslides, vegetation that expanded above the houses, and dusts created by the earthquake in the 2008 image, simple classification methods could not extract the buildings. We do not have advanced commercial software for OOA analysis, thus we chose manual digitization. It is also the easiest way to ensure temporal consistency among the inventories, which would be hard for automatic approaches due to geo-referencing of multi-sourced images.

Your comment: Figure 4: The color of the dormant landslides is not very well visible (it is better in the following figures). What is the dashed line in the image? There is only information later in the text, but not in the legend or the caption.

In Figure 4 and 6, there were no dormant landslides because all of them were freshly triggered by the earthquake.

I removed dormant landslides from the legend in these two figures and added the thick dashed line.

Your comment: Line 265: First sentence. What is the reason for that?

It is caused by large numbers of the destroyed 1-floor WB buildings, which itself was more than all 2-floor buildings combined. This was a careless description.

This sentence is rewritten:

Overall the significance in damage ratio could only be observed in damage level 1. There were relatively more 1-floor buildings repairable (22%) than 2-floor buildings (11%). A difference related with

construction types was observed, as the survive rate of the RCM, WB, W types were 23%, 17%, and 9%. The damage ratios of the three major types (RCM, WB and W), are shown in Figure 5 A. There were only 4 RCF buildings and 2 survived.

Technical corrections:

Your comment: In general, the paper is well written. However, spell check is needed, several typing errors need to be improved, partly formatting (chapter 1.3) should be adapted.

Many sections are now rewritten. Section 1.3 was shortened

Your comment: Table 4: The text “Sum: : :” is not readable.

This was caused by an error when converting .docx file to .pdf file. I adjusted the line spacing of the table to make the contents visible.

Comments of referee 2

Your comment: Moreover, if authors were to explain the results of their case study to someone in another country, what would they gain from this Chinese case study? Do they learn from the methodology applied?

Reply: Other countries may learn the experiences and mistakes presented in this case than its methodology. A new section was added to discuss the cause of the problems and possible solutions.

Your comment: In many phrases, authors provide facts, information, or ideas, but without supporting sources as to where those ideas or facts came from. All facts and information that are not common knowledge need to have citations (which are then put into the reference list) and all items in the reference list should be cited at least once in the

manuscript. Examples include but are not limited to: Section 1.1., lines 30-36 and 40, then further lines 270-284, and the events descriptions (e.g., in section 3.4) and also the final section 5.

Reply:

References and sources (if obtained by interview and investigation) were added to these descriptions. In where literatures could not be found, the sentences were rephrased to express they were not certain or removed.

Your comment: The niche and gap for this research have to be clearly addressed in section 1.1 so that the overall need and motivation for this work becomes clear, ideally this will go in lines 85-90 of the present manuscript.

Reply:

a major revision of the introduction section was carried out. Sub-section 1.1 describes a general background. the descriptions about the Wenchuan earthquake went to a separate sub-section (1.2). The study area is now in the sub-section 1.3. The gap was described in the last paragraph of section 1.1.

Your comment: Section 1.3 has to be shortened and included in section 1.2

Reply:

We have revised this based on the comment of you and referee 1. The contents were shortened and merged

Your comment: Figures: fonts are too small, Figures need north arrow, measured grid and maybe an inlet showing the case study area in China.

Reply:

Fonts in legend was enlarged and all figures now have north arrow and grid. An inlet was added in figure 1

Your comment: Figure 2: only Figure 2A is mentioned in the main text body.

Reply: The description of construction types was accidentally removed in the manuscript. A new paragraph is added to describe construction types.

Your comment: Please carefully check the English again, even if the material reads fluently, there are some minor errors such as debrisflow versus debris flow, etc.

Reply: We corrected several spelling and grammar mistakes.

Your comment: As already noted by referee #1, the overall text reads more like a technical report as a scientific paper. As such, I recommend to shorten the overall text by putting more information in Tables, and by combining some of the materials presented to that the overall appearance becomes more concise.

Reply: Many of the result part was rewritten. We removed many unimportant text from the study area and reconstruction monitoring section. A discussion section was added to address the proposed gap and aim.