

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2  
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## **Comment on nhess-2022-195**

Anonymous Referee #2

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Referee comment on "An assessment of short-medium-term interventions using CAESAR-Lisflood in a post-earthquake mountainous area" by Di Wang et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-195-RC2>, 2022

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First, I wish to acknowledge and recognise the effort of the authors for choosing to write and submit a scientific paper to a journal in a language which is not their own.

The subject is relevant and of potential interest to the readers of Natural Hazards and Earth System Sciences. As a researcher who utilises landscape evolution models (albeit in a very different environment) I looked forward to reading this paper.

However, there are multiple major issues with this paper which means I believe this paper requires major and significant revision before it is suitable for publication. Individual points requiring attention are too numerous to individually list, but the key issues are as follows:

First and foremost, is the lack of proficiency and fluency in the use of the English language and grammar, which is consistently poor throughout this paper. This makes it very difficult to comprehend the contents of the paper – for example, it is not clear what the methods were, or how sets of parameters used in simulations were obtained / derived. Because of this, it was also not clear how the results were obtained and what they actually represented, and consequently, whether the resulting discussion and conclusions could be substantiated or supported. Overall, while the aims and objectives could be understood, it was not easy to determine if they had been met. Unfortunately, the authors unfamiliarity with the English language meant that too many sentences were variously incomplete, made no sense , or utilised inappropriate or mis-spelt words.

Some comments and suggestions for improvement:

- Rather than try to describe the background to the CAESAR model and how it works themselves, I believe the authors could more clearly and succinctly acknowledge this by referencing existing publications which describe this ie Coulthard et al 2012.
- As currently written, descriptions of specific parameters and methods used in this study and the scenarios modelled are poorly described, or not described at all – for example:
  - a table of parameters lists values used in simulations, yet there is no explanation of how or why the values in the table were selected or used – for example those representing vegetation parameters (shear stress, age to maturity, proportion of erosion) - were selected and utilised in model simulations for the scenarios in this study.
  - The authors do not explain why they selected some of the parameters ie why a specific sediment transport equation was selected. Depending on the sediment transport equation applied, very different model results may occur.
  - It is not clear what rainfall data was used in the simulations – whether different sets of data were used for different scenarios, or one set was applied across all scenarios. The text about the downscaling rainfall data is simply confusing and does not address this.
  - As written, it is not clear how results are obtained or substantiated from the methods. The authors make assumptions about the ability of the model to erode that are not supported or substantiated by any evidence. Specifically, the authors describe how they have attempted to incorporate levees and dams into simulations by simply increasing the elevation in certain areas and not changing other parameters such as particle size. While this reviewer agrees it may temporarily reduce flow, in the longer term, this may well lead to increased erosion in other areas around the sides of the dam / levee.
  - The authors have demonstrated a poor use of figures and tables to support their results. Specifically,
    - figures variously lack scales or annotations to indicate where the areas of erosion or deposition are (eg figure 5), or where other features (such as dams) referenced in the text are located (eg figure 1).
    - Some figure captions do not make sense eg figure 2 does not clearly show any chart or process for generating the bedrock DEMs. Some figures do not appear to contain the information described in the text.
    - Tables are present in the manuscript which are not referenced in the text; different tables share the same number (eg there are 2 tables labelled as table 2); and some tables do not identify what the units in the table represent.
  - Finally, the authors use of referencing is poor and inconsistent.

Before they attempt to re-submit this paper, the authors **must** have the manuscript thoroughly and comprehensively proof-read by a reviewer who is proficient in both reading and writing in the English language- and familiar with the standards of scientific publishing. Once this has been done, it may then be possible to assess whether the authors have been able to address the aims and objectives of the paper, and if the results and conclusions can be substantiated. At the moment it is not possible to do this. In short, this paper has the potential to be an interesting and informative contribution to the science community but currently requires a significant and large amount of work (it effectively needs to be re-written) before it could be considered for publication.