

Specific comments

1. Introduction, Page 5211, line 16: What is “the livelihood strategy”? This might need further explanation at first mention.
Because the concept of “livelihood strategy” was only used once in the text, it has been decided to simplify this word in just livelihood.
2. In general consider changing “Tourist guide” to “Tour guide” which is a more common term. However, obviously don’t change it if it contradicts the name of the character in the game.
We updated this term with “tour guide” throughout the manuscript.
3. I think there is some potential for confusion between the characters, their households, huts and houses. For example, line 11 on page 5214: “number of living households” What is a ‘living household’? Do you mean: “households on the board?” and line 14 page 5214: “each household has to be sheltered in a hut, house etc” just doesn’t make sense either. Do you mean: “Each player needs to be sheltered in a hut, house etc”? Also line 18 page 5217: “number of households homeless” doesn’t make sense at all! Also line 9, page 5221: “hosting homeless households???” This is very confusing. I can’t remember finding it confusing when playing the game – so there must just be a problem with the description.
The term household has been changed into families to avoid confusion.
4. Strictly speaking a hazard is a potentially hazardous event, or the chance of a damaging event occurring. Once the event is occurring or has already occurred it can’t really be referred to as a “hazard” any more. I suggest changing hazard (when it is occurring) to “hazardous event” or “hazardous phenomenon”, after it has occurred it should be referred to as a damaging lava flow, tsunami or whatever.
This has been changed throughout the manuscript.
5. Page 5223 lines 11 to 16: This section is quite confusing. Too many double negatives, maybe try to reword.
To avoid confusion, the section has been replaced by:

“After the game, both sets of players are more convinced about the importance of community strategies to reduce the impact of a disaster. Regarding the spatial variation of exposure to hazards, a contrasted evolution is observed in the two groups of players. African players are less in agreement with the statement that all hazardous phenomena affect the same places while European players are on the other hand more convinced.”

6. On page 5228 you might also like to mention the volcanic disaster game

Thank you for the advice. It is indeed a really interesting game that allows learning a lot about volcanoes. The game has been added to the examples given in the manuscript. On p.21 – line 2, this sentence has been added:

For its part, Volcanic Disaster (Volcano Video Productions, n.d.) introduces the players to forecasting techniques, to a sampling of the world volcanoes and their associated hazards.

7. I think it is important somewhere to mention the availability of the game. Readers will want to know whether it is something they can order, whether it will be freely available on VHUB etc. I realize you can't use the manuscript to "advertise" the game if it is to be marketed and made commercially available, but you might be able to somehow mention what the status is of the game in terms of availability.

Indeed, we've added a short sentence to the manuscript to "promote" the game (p.4 line 27):

Hazagora is a none commercial game that available upon request.

Technical corrections

1. The affiliation "1" of the first author seems strange, is that really how it is worded?

This is the right affiliation

2. In the abstract line 12: "Based on the game strategies analysis" doesn't really make sense. Maybe change to: "Based on analysis of the most common game strategies observed

Has been updated with the suggestion

3. Abstract line 16: consider changing "playful" to "fun", and change "concept" to "concepts"

Has been updated with the suggestion

4. Introduction page 5210:

- a. Line 19: Change "havocs" to "havoc" (havoc does not have a plural) Has been updated with the suggestion

- b. Line 22: Delete "the" before international institutions Has been updated with the suggestion

- c. Line 23: Change "disasters outcomes" to "outcomes of disasters" Has been updated with the suggestion

5. Introduction page 5211:

- a. Line 1: change "highlight" to "highlights" Has been updated with the suggestion

- b. Line 2: change to: “..socio-economic context of natural hazard events is an essential factor contributing to the impact of disasters.” **Has been updated with the suggestion**
- c. Line 6: change to: “natural resources, wealth, information and health” **Has been updated with the suggestion**
- d. Lines 19 and 20: I suggest removing the 4th objective and creating a new sentence: “The game was designed to be accessible to” **Has been updated with the suggestion**
- e. Line 27: replace “start to be” with “are increasingly being” **Has been updated with the suggestion**

6. Introduction page 5212:

- a. Line 4: what do you mean by “a visual support”? Maybe replace with “visually”? **Has been updated with the suggestion**
- b. Lines 21 and 22: change to: “including the players’ contrasting strategies,..” and change “game in” to “game on” **Has been updated with the suggestion**
- c. Line 24: Maybe change “playfulness” to “fun aspect”. **Has been updated with the suggestion**
- d. Line 26: change “the disaster components” to “the components of disasters” **Has been updated with the suggestion**
- e. Line 27: I think “perspectives” is the wrong word here. Maybe “potential? “prospects”? **Has been updated with the suggestion**

7. Section 2.1, Line 4: Change to: “community in the face of periodic geological hazards” **Has been updated with the suggestion**

8. Section 2.2, Line 15: change “in” to “into” **Has been updated with the suggestion**

9. Section 2.2. Line 23: change “is following” to “follows” **Has been updated with the suggestion**

10. Page 5214 line 4: “impacts” seems to be the wrong word here. Maybe you mean “potential hazard zones”? Same line – consider changing to: “In the beginning, players are able to place two households.” **Has been updated with the suggestion**

11. Page 5214 line 13, change to: “resources, representing the variable part of the income, are obtained each year by rolling two dice (Fig 1d)”. Dice is the more common plural. Note also that numbers below 10 are generally written in full in English (one, two etc) **Has been updated with the suggestion**. Moreover, all numbers below 10 in the manuscript have been written in full.

12. Page 5214 line 19: Change “spare” to “thus conserve” **Has been updated with the suggestion**

13. Page 5215

- a. line 6: change “randomly selecting” to “random selection of” **Has been updated with the suggestion**

- b. line 9: add “, which has just one level of destruction (total destruction)” after lava flow **Has been updated with the suggestion**
- c. line 10: “with commentary provided by the game master” **Has been updated with the suggestion**
- d. line 13: delete “board game” **Has been updated with the suggestion**
- e. line 16: “It should be noted that impacts other than ” **Has been updated with the suggestion**
- f. line 22: change “but” to “and” **Has been updated with the suggestion**
- g. line 23: delete “also” **Has been updated with the suggestion**

14. Page 5216

- a. Line 14: “forecast” not “forecasted” **Has been updated with the suggestion**
- b. Line 17 and 18: “the adaptation cards allow the players to reinforce and protect infrastructure ” **Has been updated with the suggestion**
- c. Line 28: change “hazard” to “hazardous event” **Has been updated with the suggestion**

15. Page 5217

- a. Line 5: “joint” **Has been updated with the suggestion**
- b. Line 7: “..is voted for, the game master decides on” **Has been updated with the suggestion**
- c. Line 10 and 11: “..players to experience a large suite of different hazardous events and explore and refine different mitigation strategies. They can also experience the same type of hazardous event several times ” **Has been updated with the suggestion**

16. Page 5218

- a. Line 6: “were varied” (not “were contrasted”) **Has been updated with the suggestion**
- b. Line 7: change “or” to “and” **Has been updated with the suggestion**
- c. Line 14: “each hazardous event” **Has been updated with the suggestion**

17. Page 5219

- a. Line 3: “allowed observation of ” **Has been updated with the suggestion**
- b. Line 5: “No correlation between age, background and experience with strategy could be made, instead it seems strategies adopted.

To avoid confusion with what we wanted to say we decided to update the line with the suggestion and to add a little bit more information:

“No significant correlation between age, background and experience with strategy could be made. However, these factors influence the decisions taken by the players during the game. It also seems that strategies adopted during the game are influenced by personal desire to take risk or not, are mostly intermediary to the extremes strategies described below, and are changing during the game.”

18. Page 5220
 - a. Line 18: “because this conserves resources” (or saves resources) **Has been updated with the suggestion**
 - b. Line 21: “risk locations, and whether the possibility existed to” **Has been updated with the suggestion**
19. Page 5221 Line 25: “hazardous event” **Has been updated with the suggestion**
20. Page 5222
 - a. Line 6: “In contrast, the tour guide ” (and spell out all the numbers) **Has been updated with the suggestion**
 - b. Line 27: maybe change “better” and “less good” to improved and diminished? **Has been updated with the suggestion**
21. Page 5223
 - a. Line 24: change apprehension to “comprehension” or “understanding” **Has been updated with the suggestion**
 - b. Line 24: What do you mean by “adapted choices”? Maybe “adaptive”? **Has been updated with “thoughtful”**
22. Page 5225
 - a. Line 19: “rapidly develop” **Has been updated with the suggestion**
 - b. Line 20: “spent on”, and “those players gamble that they will be spared by hazardous events” **Has been updated with the suggestion**
 - c. Line 22: “higher chance of incurring fatalities” **Has been updated with the suggestion**
 - d. Line 24: change “are living” to “live” **Has been updated with the suggestion**
23. Page 5226
 - a. Line 8: “to overcome disasters” **Has been updated with the suggestion**
 - b. Line 18: “a specific strategy” (not “for”) **Has been updated with the suggestion**
 - c. Line 22: “character, thus influencing ” **Has been updated with the suggestion**
24. Page 5227

- a. Line 5: "helps develop important" **Has been updated with the suggestion**
 - b. Line 21: "having to wait too long" **Has been updated with the suggestion**
- 25. Page 5228
 - a. Line 8: spell out "three hours" **Has been updated with the suggestion**
 - b. Line 11. "Characters (not "pawns") also help the players" **Has been updated with the suggestion. Pawns has been removed.**
 - c. Line 24: "to contribute more" **Has been updated with the suggestion**
- 26. Page 5229
 - a. Line 6: feedback. No such thing as "feedbacks" **Has been updated with the suggestion**
- 27. Page 5230
 - a. Line 15: what do you mean by "adapted DRR strategies"? Do you mean: "DRR strategies adopted during the game"? **Has been updated with "appropriated"**
 - b. Line 19: "This ensures that a ." (delete the 'former') **Has been updated with the suggestion**
 - c. Line 28: "nor does it consider" (not "considers") **Has been updated with the suggestion**
- 28. Page 5231
 - a. Line 10: "it might prevent some players relating directly to the game as the specific are not represented" **Has been updated with the suggestion**
 - b. Line 25: "and it may be more suitable as an extra-curricular " **Has been updated with the suggestion**
- 29. Page 5233
 - a. Line 9: "not used to playing" **Has been updated with the suggestion**
 - b. Line 13: "more aware of 1) mechanisms of hazards .2) the elements influencing and 3) potential strategies." **Has been updated with the suggestion**
- 30. Figure caption figure 2: "Huts (one household: blue) and a house (two households: red) with road access to a water well and a food market (yellow and green tiles, respectively). This allows these households free access to these resources. **Has been updated with "Huts (one family: blue) and a house (two families: red) with road access to a water well. Both yellow and green huts of the background access a food market through the joined road network. This allows these families free access to these resources."**
- 31. Figure 4: "A cross over an infrastructure means it is destroyed.." Change "hazard" to "hazardous event" Also: I can't see

the small cross? Has been updated with the suggestion and the small crosses have been made bigger

32. Figure 7 is pretty small I couldn't read it. The letter size is now bigger.