

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC4
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Comment on nhess-2021-24

Anonymous Referee #2

Referee comment on "An inventory of Alpine drought impact reports to explore past droughts in a mountain region" by Ruth Stephan et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-24-RC4>, 2021

The paper addresses an interesting topic and is well structured. I think Reviewer 1 Loon has already pointed out several of the comments and questions that I also had when reading the paper, so I encourage the authors to address them fully and carefully in the revised version of the manuscript. I would like to point out a few additional issues for consideration by the authors:

- Both the data retrieval and the characteristics of the dataset need to be described further. For instance, the period covered by the dataset should be clearly stated in the text and the relationship between the EU and the Alps dataset in terms of counts and repeated entries should be explicitly addressed. I agree with Reviewer 1 that it would be interesting to describe and discuss the difference found for the overlap region (i.e. Alpine NUTS in the EDIIeu dataset and the EDII Alps dataset) as a result of the new impact retrieval process.
- It would be useful to strengthen the discussion in terms of the policy relevance of the database and of the trends that emerged from the data analysis. How could policy makers use them? What type of decisions could they inform?
- The manuscript presents and analyze a large body of data and it is always challenging to present large datasets and complex patterns. In some paragraphs I had some difficulties following the text. I have noted down the sentences that I found particularly challenging.

Specific comments:

p. 2 line 49 Please check the definition of socioeconomic drought. I would expect it to be "insufficient water availability to meet the ordinary demands of society and economic activities" (now it says "inadequate supply of some economic good...").

p.3 Please check the leading questions and may sure that they can be clearly differentiated. The first and the third one seems very similar to me.

p.3-4 Please specify the altitude ranges used to delineate the different spatial domains and based on what they were defined.

p. 5 Please specify in the text the time period covered by the drought impact search. IT would be useful also to know more about the search process: did the authors use a search by key words? If so, what words did they use and how effective the search was?

p. 6 line 167 "loess": do you mean "loss"?

p. 7 line 183: Do the events identified in this new search partially overlap with the EDIIeu ones? How many about of the 3,200 are also counted among the 10,600 ones?

p. 8 line 225-226: please rephrase the sentence "Thus, the frequency ..." (difficult to follow)

p. 9: Could you please explain the usefulness of comparing the NUTS 2 regions (Table 1)? What information does this comparison provide?

p.10 lines 238-252 the text is difficult to follow. I recommend simplifying it.

p.14 the authors conclude that the chosen data sources proved to be suitable as impacts were clearly linked to the drought occurrence. I suggest revising this statement: the data collection was set up to detect only impacts that are explicitly linked to drought in reports that are being searched, so it is no surprise that the retrieved impacts met that requirements. Instead, the authors could discuss (or at least mention as a caveat/limitation) to what extent they may have missed drought impacts that were not explicitly linked to drought in the reports.

p.16 line 364, I think "common" (or similar word) is missing between "most impact".

p.16 line 370-372: please rephrase the sentence starting with "Whether upstream", it is difficult to follow.

p.17 line 414: why would impacts in the Southern region be "too local"?

p.18 line 445: the text says that the Southern region reported the most impacts in spring while on the same page, on line 417, it is said "summer and early autumn are the seasons with the most drought impacts in all domains". Please clarify this apparent contradiction.

p.19 line 460 please rephrase (unclear sentence)

p.19 lines 465-466 Please rephrase (unclear sentence)

p.20, line 483: the conclusion "impact data collection EDII alps is therefore shaped by national priorities and societal effects" is unclear. Also the recommendation about customization EDII (lines 485.487) require some more elaboration in terms of what that "customization" would be.

p.20 Line 488: I recommend to rephrase the sentence starting with "our study..." as the fact of being water rich does not make a place not vulnerable to drought.

p.20 line 493-494: please elaborate on the idea of the growing diversity of impacts over time. Is it really due to an increasing complexity of the socioeconomic system in the Alpine Space? Beyond the use of water to produce snow in ski resort, I would expect all the other uses and sectors affected by impacts in 2018 to exist and be well established also in the 1970s and later.

p.20 lines 498-501. As it is written now, the reader could think that the authors have compared the impact patterns with actual precipitation patterns or drought indices. It is my understanding that this comparison is beyond the scope of the paper. Instead, in section 4.3 the authors made an interesting attempt to explain the occurrence of impacts throughout a generic year based on the literature. I recommend rephrasing these lines to make sure that they reflect the actual content of paper's analysis.

p.20, line 501-02. Please rephrase the sentence "all these...starting point" (unclear)