

Thank you for the thorough and thoughtful feedback, below please find specific comments as to how the authors intend to make edits according to the suggestions provided.

Interactive comment on “What Does Nature Have to Do with It? Reconsidering Distinctions in International Disaster Response Frameworks in the Danube Basin” by Shanna N. McClain et al.

Anonymous Referee #1

Received and published: 6 January 2017

Review of “What Does Nature Have to Do with It? Reconsidering Distinctions in International Disaster Response Frameworks in the Danube Basin”

Summary

Using the example of the Danube basin and the Tisza sub-basin, the authors attempt to reflect on whether the policy distinctions made between natural and man-made disasters are a) suitable and functional, b) up to date, c) without fault. For this, the authors made a literature review and semi-structured interviews. The thematic scope of the latter remains unclear, though. They give a broad overview on the different disaster response frameworks in their study area and show that the diversity of these, combined with a lack of cooperation and ambiguity of responsibilities enhance the vulnerability of the population living in the area. However, it remains unclear in how far these problems are related to the nature vs. man-made dichotomy and why they are not simply regarded as insufficient response systems. On a more technical level, the paper lacks structure and focus and it remains unclear in how far the interviews provided considerable insight into the question of the distinction between natural vs. man-made disasters. If the authors delved more deeply on the issues of multi-hazard and trans-boundary hazards, the paper would gain focus and – so I assume – the results of the interviews could be more easily linked to the conclusions.

Scientific Significance: Does the manuscript represent a substantial contribution to the understanding of natural hazards and their consequences (new concepts, ideas, methods, or data)?

fair

Scientific Quality: Are the scientific and/or technical approaches and the applied methods valid? Are the results discussed in an appropriate and balanced way (clarity of concepts and discussion, consideration of related work, including appropriate references)?

poor

Presentation Quality: Are the scientific data, results and conclusions presented in a clear, concise, and well-structured way (number and quality of figures/tables, appropriate use of technical and English language, simplicity of the language)?

Poor due to poor structure and lack of clarity – English and number/quality of figures/tables is good, though.

In response to the “Summary” – the scientific quality and presentation of the paper will be improved through the addition of citations, which were concerns addressed by both referees. Furthermore, additional clarity will be provided in regard to terminology, structure and argument.

Review Questions – summary

1. Does the paper address relevant scientific and/or technical questions within the scope of NHESS?

Yes

2. Does the paper present new data and/or novel concepts, ideas, tools, methods or results?

Trying, but in its current state is failing to do so.

3. Are these up to international standards?

unclear

4. Are the scientific methods and assumptions valid and outlined clearly?

no

5. Are the results sufficient to support the interpretations and the conclusions?

no

6. Does the author reach substantial conclusions?

They could be substantial, but they are discussed too superficially.

7. Is the description of the data used, the methods used, the experiments and calculations made, and the results obtained sufficiently complete and accurate to allow their reproduction by fellow scientists (traceability of results)?

no

8. Does the title clearly and unambiguously reflect the contents of the paper?

no – the authors rather describe the general problems of transboundary disasters and those of multi-hazards. The dichotomy between nature and man-made disasters and their respective response systems is rarely touched upon, and in those parts where it is discussed needs more reflection.

A discussion on the purported differences between natural and man-made disasters will be added for clarification, and since the intended focus should be on the policies for response, this will also be clarified. One of the key arguments of this article is that the historic dichotomy between natural and man-made disasters is outmoded and inappropriate. Too much emphasis on the dichotomy undermines this central argument.

9. Does the abstract provide a concise, complete and unambiguous summary of the work done and the results obtained?

Partly. The paper does examine the policy frameworks in the Danube and Tisza region. If the authors focused on the general problems of the transboundary multi-hazard disaster management, this would be sufficient. The authors do not, however, discuss nature vs. man-made in detail.

Thank you for your suggestion, we will clarify the distinctions between natural and man-made disasters. An additional 2-3 sentences with proper corresponding citations will supplement the current information in the paper.

10. Are the title and the abstract pertinent, and easy to understand to a wide and diversified audience?

yes

11. Are mathematical formulae, symbols, abbreviations and units correctly defined and used? If the formulae, symbols or abbreviations are numerous, are there tables or appendixes listing them?

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12. Is the size, quality and readability of each figure adequate to the type and quantity of data presented?

yes

13. Does the author give proper credit to previous and/or related work, and does he/she indicate clearly his/her own contribution?

From my point of view, the authors do not cite enough. I've indicated this at some points, but not always. Whenever facts, numbers, dates. . . are given, there should be a source given, just as for definitions etc. If the authors want to discuss whether the dichotomy between nature vs. man-made disasters is needed/useful, they need to cite much more literature from the social sciences, too. There (but not only there) they should find a vast body of literature dealing with nature-society-dichotomies. Furthermore, the question nature/man-made also touches considerably the issue of environmental determinism, an issue not discussed at all so far in this paper.

Per standard practice, we do not cite for facts, numbers, or dates that are readily available. We will add additional citations where suggested in the document.

14. Are the number and quality of the references appropriate?

more references advised

More references/citations will be added as suggested.

15. Are the references accessible by fellow scientists?

yes

16. Is the overall presentation well structured, clear and easy to understand by a wide and general audience?

It could be helpful if the authors provided a short summary of what their main points and/or what they wanted to say within the respective chapter. So far, the authors often leave the reader to draw her/his own conclusions without indicating what they – the authors – intended to conclude. Furthermore, the whole structure of the paper needs to be revised. The introduction should frame why the question is of importance, and should also give a broad literature overview. The results of the literature research – a task common to all scientific studies – has to be moved from the (supposed) results section to a section on the differences between response systems to natural and man-made disasters, respectively. The literature review should either focus on this question, or the scope of the paper needs to be changed towards the general problems of transboundary multi-hazards in the Danube region. The method (semi-structured interviews) needs to be explained in much more detail in order to be comprehensible and reproducible. Within the results section, the outcomes of the interviews need to be much more clearly linked to the research question. Within the discussion, no new literature and results should pop up.

The methodology used in the interviews was also raised by referee #2. We intend to expand and clarify the methods section to address this comment, and link the outcome of the interviews with the research questions as suggested.

17. Is the length of the paper adequate, too long or too short?

too long – if restructured and focused it can be much shorter

18. Is there any part of the paper (title, abstract, main text, formulae, symbols, figures and their captions, tables, list of references, appendixes) that needs to be clarified, reduced, added, combined, or eliminated? see above: literature review, methods, results, discussion need clarification, restructuring and – partly – reduction.

19. Is the technical language precise and understandable by fellow scientists?

yes

20. Is the English language of good quality, fluent, simple and easy to read and understand by a wide and diversified audience?

yes

21. Is the amount and quality of supplementary material (if any) appropriate?

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Specific comments Major points

Introduction: Line 41: The authors start with principal questions on the benefits and consequences of distinguishing (or not) between natural and man-made disasters. Although starting with a question is “catchy”, here some introductory sentences on the type of distinctions traditionally made is missing.

We will address this comment by providing clarification on the distinctions among disasters. This will most likely be the same clarification as noted above in comments #8 and #9.

Lines 44-49: The line of argument needs to be sharpened: One could simply argue that we need another type of expert for this kind of disaster, i.e. an expert for cascading events. As the argument reads now (without having read any further), you seem to argue that expert knowledge in one field is not enough, but that we’ll need “interdisciplinary experts”. This is a common and popular demand, but nevertheless a tricky one and not as straightforward as it seems (e.g. you need to be an expert in a specific discipline in order to become a good “interdisciplinary expert”). I’d also argue that we need dichotomies in order to structure our knowledge (how else should we do it?), but that maybe the type of dichotomies need to be reconsidered. Hence, your argumentation seems to be plausible, but at a closer look is too shallow and short.

Further clarification and sharpening in regard to the need for improved holistic policies to streamline response will be provided.

Lines 50-54: These “facts” disturb the line of argument: First, you state that dichotomies need to be eliminated (without really giving any reason for this statement), then you give some numbers of total losses, only to then switch to an example of a natech accident in your study area, and you end the latter paragraph by stating that international help was needed. Maybe my listing reveals to you, too, that you’re doing just that here: listing different facts and arguments without any coherence with regard to content. What is the problem with the fact that international support was needed? What does this have to do with your initial questions? You seem to imply that if specific experts for cascading or natech events had been in charge, then this support would not have been necessary – but you don’t say this explicitly, and most importantly: you do not argue why this would have been so. You need to exclude other factors, e.g. the lack of financial and other resources, the lack of disaster response measures – or the mere possibility that this happened because no-one ever thought something like this could happen (a core characteristic for why a disaster is a disaster. . .). In short: Discuss.

We intend to address this comment by further discussing and making clear the point that disaster policies have traditionally divided response between natural disasters and response to man-made disasters, explain how this has created problems in practice, and how this can be improved upon via more holistic policy approaches. We will specifically rework lines 50-54.

Lines 85-93: This section should reason why you structured your paper the way you did. For example, by stating “in order to understand why. . ., we first exemplify. . .” or the like. The mere structure becomes obvious by the headings.

An explanatory sentence indicating why the paper has been structured as it has will be added.

Overview of the study area and methodology: Line 168: The numbering of the heading does not make sense. If you want to split section 2 in parts, you do need at least two parts. Either you skip this sub-heading, or you split section 2 in 2.1. study area and

2.2. methodology.

The numbering will be restructured accordingly.

Line 168ff: the whole section remains rather superficial. It is unclear why the authors chose a semi-structured interview (and not another method), how they chose the interviewees (criteria?), and what was the framework of themes to be explored within the semi-structured interview. Has there been an interview guide, and if so, what was in there?

We will expand the methods section and describe the use of semi-structured interviews, along with greater detail of how individuals interviewed were selected, and themes to be explored within the interview process.

Lines 191ff (table 1): Currently, the table does not provide much information. It could be interesting, for example, how many experts from international, national, ... have been interviewed. Plus, change the order: International, national, regional. Ah no, I only realize now that you imply a different understanding of "regional" - this is somewhat confusing. Plus, I am not quite sure why the EC is not listed within international (just as the ICPDR, which even has "International" in its name)? Maybe you should then write supranational instead of regional? Or, yet another possibility: global, international, national. Non-state actors could also be distinguished in global, international, and national (or at least it should be clarified which type of non-state actors).

Additional clarification will be provided regarding table 1.

Distinctions between natural disasters and man-made accidents in policy frameworks: Lines 211f: I do not understand the meaning of "traditionally" in this sentence. Does this imply that non-traditionally the approaches do not shape monitoring and response methods? Plus, some source(s) should be given for this statement.

We will remove the word "traditionally".

Lines 223f: I do not understand what you want to imply with this sentence. Here, again, you simply place a statement without source, and more importantly, without saying what you want to say with it. Currently, this sentence is a mere filler.

This sentence will be removed.

Lines 224ff: This is not the definition of disaster, but the definition of a natural event. In order to be a disaster, people have to be involved. Plus, if you give a definition, you should also cite the source for the given definition. If you give a correct (in the sense of well-accepted) definition of natural disaster, it might also become easier to discuss whether the distinction of natural vs. man-made makes sense. After all, it might also be seen as a decision of individuals or the society to take some risks – hence, is the disaster (not the event itself!) man-made or natural?

Citations will be provided to support work.

Line 229: "some natural events"? Why only some? And other natural events are disasters per se? Plus, you're not sticking to your initial definition of natural disaster.

Clarification will be provided.

Line 230ff: They only become a function of where people reside? In opposite to what? Has this ever been different, i.e. something has been a disaster without any impact on individuals or society? I do not think so.

Clarification will be provided.

Lines 238-256: The paragraph is well argued. However, the conclusion of the argumentation is still missing. As a consequence, the authors leave the reader to assume what they want to state. For example, I assume that your statement is that natural disasters become a disaster due to societal circumstances and conditions. Because of this, you might want to state, the term “natural disaster” is misleading, which could be a first hint that the distinction between man-made and natural is not useful. But as I said, this is what I assume – you keep the reader in suspense.

Clarification will be provided.

Line 264: How do disasters multiply or become more complex? This, again, is a mere statement without any source or argumentation given. Why should disasters be more complex nowadays than in previous times? Do they multiply, or is this a question of awareness and/or mass media and/or statistical bias? There are so many questions and uncertainties attached to this statement that it needs source and discussion, the latter especially if – as I think it is – the statement is important for your line of argumentation. Please be also aware of the difference between complex and complicated. As your focus is on dichotomies and differences, I think you should be especially clear with respect to your wording.

Clarification will be provided regarding what is meant by complex, or cascading events.

Lines 273ff: So what you meant by “complex” in the previous paragraph actually means the degree of uncertainty of knowledge of cause and effect? In fact, I do not quite understand why you include this aspect here and what you want to tell the reader with it. How does it relate to what was previously said? Over wide parts you employ an “additive style of writing”, i.e. adding several arguments without clarifying how these arguments relate to each other.

Clarification will be provided, as mentioned for line 264.

Lines 221-279 (section 3.1.): I do not quite think that you give the “rationale for different treatment” of natural and man-made disasters. The rationale could be stated in two or three sentences of what you wrote and seems to center around liability. Plus, not only natural hazards but also man-made hazards are a function of where people live, but you do not discuss this. In fact, you leave the reader rather puzzled with respect to what you really want to say. What you do in this chapter is discussing different terms (e.g. moral hazard and vulnerability (although one could ask if especially the latter should be discussed in the context of man-made hazards, too?)). Honestly, I do not quite get your point, and I still do not know the “rationale” behind the distinction of natural and man-made hazards – apart of the question of liability. The mentioning of climate change at the end of this section further adds to this confusion. Maybe if you change the heading of this section, so that it reflects the discussion of the difficulties in distinguishing between “natural” and “man-made” with respect to disasters, the section would gain focus.

Similar concern was also raised by referee #2, we will either rename the section or further clarify the argument within section.

Lines 284-286: Before stating how the fragmented nature of disaster response has emerged, you should explain in how far the disaster response has been fragmented so far.

This was provided in lines 280-330, section titles “Dimensions for Different Treatment”.

Lines 288: Why do you refer to chemical accident response programs only? Here, you assume that the reader knows all or sufficiently enough about response programs to man-made hazards. In order to provide the reader with the knowledge that (s)he needs for understanding your argumentation, you need to give an overview of the respective response programs. Are natech accidents included in industrial and nuclear etc. response programs?

We will refine the text to make it clear that natech accidents are absent from policy response language.

Lines 280-322: I'm afraid I'm totally lost – I do not understand what you want to state within this section. Maybe repetition and clarity would help: The principle of “First, state what you're going to state, then state what you're stating, and the state what you've just stated” might be useful here and in other parts of your paper. You need to be much more explicit about your take-home-message in every section of your paper, as well as in your paper as a whole.

Disaster frameworks in the Danube and Tisza: Line 331: Heading should be changed to “Introduction to disaster response programmes (? If that is what is meant?) in the Danube and Tisza region/basin/. . .”

We will clarify content of section.

Line 353ff (Table 2): It remains unclear what classifies as disaster here. Is it classified by each individual country, or is there a definition of the EC that is utilized here? Or is your above "definition" used, meaning that any event is a disaster? Sometimes, you add "natech" to an event, but it remains unclear why it is classified as such.

We will clarify and define these variables appropriately, as mentioned in previous suggestions.

Line 355: Heading 4.2. is misleading – it is a sub-section of the Danube and Tisza but the heading reads as if response frameworks in general are treated. Without having read the section so far: If you do discuss the response frameworks in general, then this section has to be moved further to the beginning of the paper, since all your argumentation is based on the differences in these frameworks. However, to this point of the paper, you have not given any information on how they do in fact differ. If you discuss the response frameworks with respect to the Danube and Tisza region, say so in the heading. However, the first sentences of the sub-chapter suggest that the first is the case, so that this section will have to be moved. Another possibility is to split this section and to move the general part to the first parts of the paper, and to keep the Danube-specific section here (with an appropriate heading). In particular, the heading should stress the differences between response frameworks for natural and man-made disasters, respectively, and not the differences of frameworks in general.

Line 389ff: This is a little bit confusing for the reader: The focus of your paper is – or should be – the problems arising from the dichotomy of response frameworks for natural and man-made hazards, respectively. Your discussion, however, centers on general problems of disaster response frameworks such as the different treatment of sudden-onset and slow-onset disasters. This is a major issue, but minor with respect to your main question, and thus misleading for the reader who starts to lose track.

We will clarify the language.

(in the following, I left my initial comments to transport my confusion while reading. It was not at all obvious to me that I was reading the results-section) Lines 409ff: These are already results and do not belong in this section.

Lines 470ff: see above – these are results. Lines 493ff: see above, results.

Lines 506ff: see above, results. Lines 539ff: results?

Lines 589ff: results? I start to realize only now that this seems to be supposed to be the result section. It seems that the authors employed an inductive way of reasoning, and this is reflected in the structure of the paper, which results in some difficulties for the reader. Deduction, however, is part of “normal science” and is thus what the reader would expect and – in fact – needs in order to follow the argumentation. Hence the authors need to rearrange the content of the paper, so that the results of the literature review – which, actually, is part of every scientific study and thus is not really a “result” but rather prerequisite for any study – need to be given first. This is then the framework in which the detailed results of the interviews can be set. Hence, your paper needs a profound restructuring.

Questioning the distinction Line 612: Do you really believe that vulnerability can be avoided? How should this be possible?

We will clarify that vulnerability can be reduced.

Line 613ff: What do you mean by “proper”? Disaster is characterized by something unexpected happening – how can this be “properly” avoided? Again, this is a mere statement that would need discussion.

The word “proper” will be removed for clarity.

Line 616: There is ample literature on the question whether natural hazards can be considered natural hazards. Maybe this literature should be reflected, too – the discussions go much further and deeper than is currently the case in this paper.

We will clarify the distinction between hazard and disaster, and the focus of this paper – disaster response.

Line 616ff: It still remains unclear what difference it would make to simply name natural hazards not natural, but complex hazards or maybe even man-made. The key is to consider all potential causes and triggers of disasters, regardless of them being natural or man-made. Hence, the problem is not the distinction, but the problem is the insufficient knowledge regarding causes and triggers – and maybe also: that new technologies bring with them new hazards and risks, which can often only be known in retrospective. Instead of propagating a

higher level of security by avoiding the distinction between man-made vs. natural you could also come to the conclusion that “proper protection” is impossible. With your argumentation you presume that things would change for the better just because of naming it differently. This is clearly not the case. In a nutshell, so far you simply argue for taking more causes and triggers into account, in other words: for a better understanding of the hazardous processes. Everybody would agree on that – but what is the new finding? And how does this relate to the interviews you’ve made? The results you’ve mentioned so far do not at all relate to your initial question.

The language will be clarified to link the previous argument.

Line 631: Why “for this reason”? As you wrote before, this accounts for every type of hazard, not only natech! Highly populated areas mean higher risks (not hazards!).

We will clarify wording regarding disaster versus hazard, as mentioned previously.

Line 651: Are we in the discussion section now or still within results section? Here, you suddenly bring new results (as well as new literature) – if this was supposed to be the discussion section, no new information should be given, but only previous information be discussed.

Line 677: Section 6 suddenly brings up multi-hazard approaches, without them being mentioned beforehand. Actually I have more or less expected the paper to start with multi-hazard approaches, as natech would classify as such. Here, at the end and in the way you present this information, it is not included in the previous discussion, but suddenly opens up a new discussion that leaves the reader rather helpless: How does this relate to the previous sections? Why does this come up now? How does it relate to “multilevel disaster response”, yet another issue that is new and non-discussed?

Wording will be clarified regarding holistic policies for disaster response.

Minor points - See comments within the attached pdf

We will correct all minor points as attached, thank you.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2016-307/nhess-2016-307- RC1-supplement.pdf>