

## ***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 #2**

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Review of NHESSD 2016-307 (What does nature have to do with it? – Reconsidering distinctions in international disaster response frameworks in the Danube basin) by McClain et al.

The distinction made between natural hazards and man-made disasters is not so clear to me since the policy and therefore institutional framework needed for risk management is interrelated.

In the introduction the authors argue that the dichotomy between both disaster types – even if historically grown – is to be eliminated also because of the effects of anthropogenic climate change. I encourage the authors to not overemphasize the man-made effects on climate here since also the natural climate change together with the socio-

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economic development in the case study regions call for more tailored risk management options. Maybe the introduction would gain in conciseness if the argumentation string will be streamlined and some additional references (apart from these of international organizations) are consulted. Even by searching quickly Science Direct, some sources caught my eyes and with respect to the mentioned natech disasters some studies are available.

In their overview on the case studies I am missing some Citations (there should be more than ICPDR available), also with respect to the historical flood risk management activities in the region, and I kindly would like to suggest to also show rivers Danube and Tisza in Figure 1.

In the method section some clarification is needed in order to better follow the arguments. To give an example, the authors conducted 71 interviews and an overview is given in Table 1. In Table 1, however, it remains unclear what exactly the numbers in brackets show: Either “multiple interviews conducted at each level of governance”, which should then sum up to 71, or “a reference to the interview citations in the text”, as indicated in the Table footnote. Moreover, the method section is quite short (only two paragraphs) and does neither describe the secondary data analysis nor the sources for this analysis. An additional Table could help here. Some additional information is needed on the method itself, why semi-structured interviews were chosen and which criteria were used. Finally, if there is a section 2.1 there should also be a section 2.2 in the text (could be linked to section 2 so that 2.1 is the overview on the case studies and 2.2 is the method description).

In section 3.1, more citations are needed to underpin the statements made; for flood risk in Europe there are some sources available showing the historical development of risk management beyond the simple classification of disasters being seen as “acts of good” and technical approaches. Moreover, in this section the wording is a bit confusing since the authors are addressing dynamics in exposure (population and assets) but are talking about vulnerability (which even from a societal point of view is more than

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just exposure). There have been some articles in the targeted journal (NHESS) on this topic which may serve as guidelines for re-writing this section. So I suggest to first make a clear distinction between hazard, vulnerability and risk and second between different management options for technical and natural disasters (and here I suggest to only focus on the disaster type studied and not on all types of disasters since the management of earthquake risk in Danube countries is highly different from managing flood risk. The same for moral hazard: also here we do have excellent examples published in NHESS on the associated issues (insurance etc.). Of course the authors are free to choose any other sources, but this will help to streamline the chapter and to make it more concise, also with respect to the hypotheses and statements the article is at the moment missing over larger parts.

With respect to section 4 (Disaster frameworks. . .) I suggest to shorten the introduction and to integrate the material in the overall introduction of the paper. This would help to increase the accessibility of the text, and to streamline the string of argumentation (which is the different treatment of natech and natural hazards in both of the catchments?). The different treatment is, moreover, also a result from the different legal situations in the affected (EU) countries, as such it remains a bit unclear to me how the current top-down approaches are interwoven. It may be good to re-write this section in a way to mirror (a) the overall UN activities which are somehow legally binding, and (b) the regulations spanning from EU level to individual countries and below (some regions may have specific rules and also a specific institutional setting, such as e.g. the water associations in some of the Austrian federal states (see for example Thaler et al. (2016; 2016) for some in-depth discussions). I also assume that potential reasons identified for a lower level of integration in terms of flood management on river basin level as opposed to bilateral levels are connected to funds availability as well as potentially a lack of political will, while Tisza states focus on preserving their national sovereignty. Did this also result from the interviews?

An additional Figure with all the regulations (in terms of boxes and arrows) would also

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help to clarify the diversity here.

Section 5 could then be better connected to section 4, and here I also would like to raise the question whether it is really a dichotomy or a “question of distinction” between natech and natural hazards (both of them of course could be cascading, see for example the discussion in Kappes et al. (2012)).

To summarise, I kindly would like to suggest to

- Streamline the paper in terms of avoiding repetition,
- To clearly discuss definitions on hazard, vulnerability and risk in the very beginning,
- To clearly state the hypotheses in the introduction,
- And then to smoothly develop a set of arguments why the current management is suboptimal and where you identified necessary changes. This should be clearly linked (or more prominently stated) to the interview results.

I encourage the authors to undertake the necessary improvements and I definitely believe that then the paper becomes acceptable for publication in a journal such as NHSS.

References mentioned in the text

Kappes, M., Keiler, M., von Elverfeldt, K., and Glade, T.: Challenges of analyzing multi-hazard risk: a review, *Natural Hazards*, 64, 1925-1958, 2012.

Thaler, T., and Hartmann, T.: Justice and flood risk management: reflecting on different approaches to distribute and allocate flood risk management in Europe, *Natural Hazards*, 83, 129-147, 2016.

Thaler, T., Priest, S., and Fuchs, S.: Evolving interregional co-operation in flood risk management: distances and types of partnership approaches in Austria, *Regional Environmental Change*, 16, 841-853, 2016.

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