

## ***Interactive comment on “The flood of June 2013 in Germany: how much do we know about its impacts?” by A. H. Thieken et al.***

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General Comments:

This article is a significant contribution to the long-standing and far from being solved issue of natural disasters' losses quantification. The study took into consideration an extensive flood event occurred in Germany in the recent past. The authors collected the main information about direct human and economic losses reported by national and regional institutions. The study also represented the magnitude of indirect and intangible impacts by presenting proxy data (as for instance the interruptions on the transportation routes) and conducting surveys (mainly for health and psychological impacts). Main objective of the study was to compare what actually the German institutions reported after the 2013 flood with the requirements of the most recent European and interna-

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tional guidelines for loss data collection aligned with the objectives of the 2015 Sendai framework on Disaster Risk Reduction. The article concluded that this case study highlighted how the procedures used by the institutions for natural disasters' losses data collection were far from being adequate to the elevated standards required by the most recent literature. The scientific significance of this paper is mainly represented by the effort made in organizing a series of fragmented and heterogeneous information in a more synthetic and comprehensive document that could serve as term of reference for future analysis of institutional development in disaster losses reporting. Doing this, the article fits the scopes of the Natural Hazard and Earth System Sciences Journal. The amount of information collected is massive and denoted an extensive work, but the different sources and the sometimes-incoherent data made its presentation slightly unclear and hard to follow. The authors made no attempt of conducting an assessment exercise aimed at creating new and coherent estimates able to validate or prove the inconsistencies of the official reports. The surveys conducted were aimed at generating data not reported in the official reports. In conclusion, the good contribution that this article brings to the natural hazard scientific community could be further improved with some revisions.

#### Specific Comments:

- The international reader, with a limited knowledge about the subnational political organization of the country object of the study, would benefit from a better geographic organization (maps) of the majority of the data presented in the article. Figure 1 showed only part of the geo-referenced information exposed in the rest of the article. As an example, in sections 3.2.1, the Authors pointed out that 12 out of 16 federal states were affected by the flooding, and the state of emergency was declared only in 8. This information should probably be reported earlier in the manuscript (Introduction) and the federal states presented in a map.

- In figure 1 the inundated areas should be better highlighted in order to give to the reader a better idea of the flood extent in the each of the federal states.

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- A map overlaying the population distribution and the flooded areas in the federal states would help to better represent the exposure to the specific flood event, and the magnitude of the exposed population, in comparison with the “affected” population of the official reports.

- One of the main purposes of the paper was to verify if the information collected by the federal governments covered the main indicators listed in the cited guidelines (De Groeve et al. (2014); Corbane et al. (2015), and IRDR (2015)). A more organized list of the main indicators could help the reader to understand the main requirements and the differences between the federal governments in loss reporting. This was only partially done in Tables 1 and 2.

- In section 2.3.1, the Authors specified that the survey was conducted among households in the flooded areas. Information (map or statistics) about the sample spatial distribution would be helpful to understand the uncertainty that sample size and characteristics brought to the final results.

- The regional stratification of the interviewed subject would help to better present also the information in figure 2. Are respondents affected differently in different areas?

- In section 3.1.1, the description of the table 1 presents numbers that are inconsistent with the table itself. For example, the section reports one human loss in Bavaria, while the table reports 2 losses, etc. . .

- In section 3.2.1, page 22, the authors described figure 4, comparing the sectoral losses of two of the most affected federal states: in Saxony, state owned infrastructures seem to be more affected than private households, while in Bavaria is the opposite. Is this due to reporting problems (i.e. damages in private households were better documented in Bavaria)?

- Table 3 and Figure 7 (waterways and railways interruptions) would be better if presented on a map, like figure 6.

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- Section 3.4 and Figure 8. The results of this survey could be different if the data were stratified by economic sector/industry or, in general, company characteristics (as specified in section 3.1.2).
- Section 3.6, page 32, it would be of use to present the information about pollution spreading on a map.
- A general revision of language and typos (as for instance page 4 “anew”) should be also considered.

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