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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Reporting flood damages: a model for consistent, complete and multi-purpose scenarios" *by* Scira Menoni et al.

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We really thank the referee for their comments and suggestions on the manuscript that we will try to address in the best possible way, in a revised version of the paper. We agree with them that considering the aspects that they have raised, the article may become more robust and comprehensive. In the following, we briefly discuss how the different points will be met.

Referee 2

General Comments

1. 1.1. The model is conceived to supply event scenarios that meet knowledge requirements of different stakeholders after the occurrence of an event. In the immediate

aftermath of a flood, the priority is to assess damage to understand what are the needs, particularly in terms of compensation. However, later on other needs arise and it has been recognised that without a satisfactory damage data collection such goals will not be satisfied, in particular, related to disaster forensic and improved risk assessment, also with the aim of reconstructing in a resilient way, reducing pre-event risks. In the reconstruction phase, other stakeholders become prominent, such as developing and reconstruction authorities, planners, citizens' associations: they will all benefit from a more comprehensive and multipurpose data collection and analysis. There are however also other actors that will benefit from such a comprehensive view of the disaster, such as utilities managers, insurance companies, researchers, etc. that can all use information supplied within the scenarios for better understanding the risks. 1.2. Consistency will be achieved once all event scenarios in the future will supply damage information according to the same logical structures (e.g. distinguishing among sectors, types of damage, drivers-i.e. explicative variables), and at the spatial and temporal scales that are relevant to assess the different types of damages, so that comparison will be possible among different events. There are already signs that authorities are going in this direction: for example national governments and the EU for managing the solidarity fund are pushing towards a more structured way of providing damage assessments. However those efforts would benefit from a fully consistent structure that will be replicated in many events in the future instead of producing incrementally each time a new format for the assessment. 1.3. and 1.4. We agree that this model per se does not allow the development of forensic investigation but it supplies all the knowledge required to perform it. We believe a forensic investigation is able to identify the root causes of the disaster, by analysing if and to what extent damage was due to hazard, exposure, vulnerabilities or a combination of those factors and to what extent mitigation measures taken in the past have been effective or not. An example and some considerations of how the scenario developed for the 2012 flood in Umbria has been used for a forensic analysis will be added in the new version of the paper.

By responding to the previous doubts that you share with the first referee, we under-

stand we need to clarify much more those issues (1.1. to 1.4) in the new version of the paper, including explanatory paragraphs where it pertains.

2. As for the minimal level of disruption and damage that is necessary to trigger this large effort of data collection, it is not currently described in the article, but will be. We suggest that there is a threshold beyond which it does not make sense to carry out such a comprehensive investigation. It may be suggested that an event that is really local and small magnitude should be treated in different ways also in terms of data collection procedures and analysis.

3. The share of damage to different sectors with respect to the overall damage (Figure 2) has been estimated once the full analysis of damage to each sector has been performed, by comparing the total values that have been obtained. So the share is the result of the overall analysis and reflects the assessments that have been done for the individual sectors. Care has been put in making the treatment of sectors and the data that have been used for the analysis comparable and coherent. Even though 100% consistency is hard to achieve when data come from multiple sources, data treatment and pre-processing has been made rather carefully. This is not fully explained in the article, whereas we will add a couple of comments in this regard in the new version.

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