

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

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daniela.molinari@polimi.it

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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 1

General comments

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

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model is targeted to public authorities, utilities managers, civil protection authorities, researchers, decision makers. The latter will use the information for different purposes such as damage accounting, disaster forensic, improved risk assessment and response to the affected communities' needs, particularly in terms of losses compensation. What the article is not clear enough about is the fact that the model is not per se a model for disaster forensic or risk modelling, however it provides relevant information and knowledge that may supports both activities. As an example, 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. 2. The model implementation requires a coordinator, which will materially develop the scenario, and has a general vision of available data and required analyses to meet all stakeholders' needs. This role can be assumed by public administrations but it's however context specific (i.e. it depends on the institutional/juridical context in which the model is applied). Truth is that the last report of the JRC Technical Group (2015) introduces the roles of data coordinator and data curator. However, it is not so easy to define who actually such figures should be. Furthermore, the EU Commission has in mind a national data coordinator that will take care of the national database; however, from our experience with the Umbria Region, we understood that without a coordination damage data related to multiple sectors will never be collected and organised under the same data structure also at the regional level (or database or Information System). On the other hand there is still discussion if the data coordinator should be also the one who carries out the analysis or if those figures should be distinct. In the new version of the paper this will be better discussed. 3. Coherently with the last point, we will better describe who are the agents that should carry out the data collection and analysis, how and at what costs, making reference to an article that has been recently published in 2015 (Ballio et al., 2015 already quoted in the current version of the paper) where the procedure applied in the Umbria case is explained in more detail. Time and efforts to conduct this new type of assessment are certainly relevant the first time, due to the novelty of the approach. However, we found in the same Umbria experience that at the second

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round (flood 2013) things go much more smoothly. Also as far as costs of the procedure, it must be said that in any case a data collection activity is already carried out by different stakeholders. There is certainly an extra cost due to: (i) more data to be collected and (ii) the need to appoint a data coordinator. However this extra cost can be partially lowered by improved organisation, by optimizing activities and resources to carry out the damage assessment. What remains as an extra cost is paid back by the advantages. This is consistent for example with what the World Bank says in the report “Data against natural disasters” (2008): mainstreaming information systems management into disaster management makes not only the data collection more efficient and sustainable, but improves also the disaster management performance. In any case we will discuss those points better in the revised version. 4. We agree that a well conceived and maintained information system is key to support the model implementation. We will extend the discussion of IT tools for data storage and query in section 4 to include such aspects. As for the possibility to extend the model to other hazards, the current version of the paper is not covering this point, however we can provide some reflections based also on the experience of some of the authors in the field of seismic risk and referring to what literature and other experiences such as the PDNA suggest. 5. As for the “financial” aspects, the current practice of the Italian Civil Protection already shows the advantages of improved reporting (even though not as comprehensive as our model suggests). First, the reporting system introduced in the last five years or so has permitted to better justify expenses with respect to a “going freely to the cash model” (as it used to be in the past) where no control can be made on the overall costs and who is sustaining them. Second, a more comparable reporting systems has already allowed for evaluating how much the country is spending every year for floods (even though for a limited time frame). Our model suggests an improved and more standardized way of carrying out the analysis, differently from the current situation in Italy where such reporting systems is adjusted incrementally, thus changing it every time, making the comparability weaker. Our model, where the assessment of damage to multiple sectors is more consistent than in the current practice, a better

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decision making procedure regarding the priorities among sectors and inside sectors among the most relevant items to be reconstructed can be defined and has actually supported decisions in the Umbria case.

Specific comments

6. The paragraph in which the four issues that are generally covered by current damage assessments and where it is suggested that our model improves the current situation will be rephrased to make it clearer. 7. A reference to the “financial” advantage provided by the model in terms of enhanced reporting and analysis of damages and costs will be made in the abstract. 8. We will add examples and explanation to better define spatial and temporal scales. The first one refers, in particular, at the scale(s) at which the different types of damage can be appraised and at which the analysis must be conducted. The second one refers to the times, after the occurrence of an event, at which the analysis must be performed. In our joint work with the Umbria Region we have tailored the timing of report’s development and updates to the administrative timing established by national laws and ordinances before and after the declaration of the state of emergency. 9. The relative weight in terms of in depth of analysis will be changed between sections 3.1 and 3.2.. The latter will be extended to account for how the analysis by variable can be of use for a forensic investigation, providing the explanation of why given damages occurred the way they occurred in the provided example.

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