

## ***Interactive comment on “Development and testing of a community flood resilience measurement tool” by A. Keating et al.***

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The authors would like to thank the reviewer for their thoughtful and useful comments on our paper. Below we outline how we could address specific points raised by the reviewers in a revised manuscript.

‘However, in its current state the theoretical foundation and scientific arguments of the article are rather weak, especially the theoretical embedding of the resilience concept and the variety of associated and applied frameworks and concepts remains insufficient.’ We will outline, in the introduction, the rise of the use of resilience in the disasters field, an overview of contemporary theoretical and conceptual debates, and key definitions in the field. We will highlight literature (including that suggested by reviewer #1) which provides a more comprehensive review, which due to space constraints is

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outside the scope of this paper. We will also move the discussion of how resilience is conceptualized for the purposes of the measurement framework from section 3 to the introduction.

‘Furthermore, the presentation quality should be substantially improved. Too many details and disorganized structure with references to other chapters leave the reader tired and confused. Restructuring the some chapters might be useful.’ We will revisit the structure of the paper and see where improvements can be made. Presenting such a complex framework, together with all required critical reflections, and further details required by the other reviewer, is quite the challenge.

‘Chapter 2: Review: the challenge of measuring resilience Before referring to different aspects and challenges of measuring, it would be helpful to start with a wider (critical) theoretical reflection on the idea of resilience, community and wellbeing, their interplay as well as the derived definitions.’ We will provide an overview of the resilience debate in the introduction, and a critical reflection on the interlinked concepts of resilience, community and wellbeing at the beginning of section 2 as the reviewer suggests. However, in the interest of space and to keep this article tightly focused, we will do this by referring readers to the other literature reviews of the concept. The purpose of this paper is not to build theory but to offer a practical application of theory. We will make this objective more explicit in the introduction to better orient the reader.

‘Chapter 2: The challenges described remain relatively general (and also applies to Vulnerability). The interconnected and predominant qualitative character is not considered.’ We will include a discussion of the challenge of measuring qualitative features in section 2. We will also expand on the discussion of thresholds (section 2) to include a more general discussion of interconnections.

‘The aim and target group of the presented framework should be defined more at the beginning of the article.’ We will provide a paragraph outlining the objective and audience of the paper in the introduction.

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‘Chapter 3: Development of the measurement framework The second and third paragraph on the understanding of resilience and definition of community should be elaborated (s. chapter 2) and placed earlier in this article.’ Agreed, see above.

‘Chapter 3: If data collection and framework development is mainly conducted exploratory, it should be more emphasized.’ We will provide more detail on pilot testing including data collection and grading process.

‘Chapter 3.1: foundations of the measurement framework The link between the two theoretical concepts on the one hand and the concepts of operationalization on the other hand is not obvious. What additional value do the IFRC-Approach and the V to R Framework have? How does risk understanding of engineering is compatible with resilience and development context? What are the factors that need to be graded? Parts of these questions are explained in the following chapters, but it’s hard to establish the link three pages later. The theoretical foundation is not clearly described.’ The IFRC and V2R approaches were key inspirations at the beginning of the development process, we will outline this in more detail. The risk engineering approach to risk assessment was the model upon which we designed the grading system; we will outline further how and why it was translated to resilience measurement. As described above, we will revisit the organization of the paper.

‘Chapter 4.1: How sources are organized within the tool The title of this chapter already refers to the “tool”, although the development of the tool is described in chapter 5. For a better understanding any kind of visualization of the categories and proceedings would be useful.’ Agree, will change to ‘framework’. We will also provide a figure to aid the reader in understanding the multidimensional framework.

‘Chapter 4.2: The selection of outcome measures is not explained and appears arbitrary.’ We will describe the literature review and extensive consultation process which led to the selection of the outcome measures.

‘Chapter 6: Conclusion and way forward: A critical reflection of the used methods and

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challenges regarding data integration and analysis would be interesting. What are underlying assumptions or structures and how they will be addressed in data analysis? If different perspectives are captured, how contradicting data is handled and weighted?’ We will enhance section 6 with insights gleaned from the current implementation process, which speak directly to the reviewer’s points.

‘Technical corrections line 16: “is is’ Corrected.

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