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Interactive comment on “FLOPROS: an evolving global database of flood protection standards” by P. Scussolini et al.

P. Scussolini et al.

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Authors: We thank the reviewer for the kind words of appreciation for our work, and for the constructive points raised, which we have endeavored to address in the text and/or in the following explanations.

Reviewer #2: The paper describes the launch of a first version of a global database aiming at gathering the most up to date, reliable, and high resolution information available on protections standards, and to maintain a database that can be of use to research and management of flood risk, from the local to the global scale. The paper is well elaborated, sound and of relevance. There are some minor remarks which need to be considered or described in more depth, prior to publication.

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[Discussion Paper](#)



Reviewer #2: p. 7276 / section 1: The reviewer doubts the number provided (40 Mio. people at risk worldwide) for people at risk against a 100 years coastal flood event. More than 50% of the global population is living in the coastal zone...

Authors: The reviewer is correct that more people are at risk worldwide. The 40 million refers to (a selection of) port cities only. We re-phrased the second sentence of the Introduction to accommodate more contextualized information on the figures provided, which to the knowledge of the authors, are the most updated estimates of coastal flood exposure. It now reads: "... and 40 million people and 3 trillion USD are exposed to coastal floods in the world's main port cities (Hanson et al., 2011)."

Reviewer #2: p. 7280 (c): The model layer solely refers to river flood protection. It is not described or discussed why there is no information on coastal floods.

Authors: We thank for the suggestion. We add, in the revised version, at the end of the "Methods section" a sentence to stress on the lack of datasets that would enable the generation of a Model layer for coastal floods: "We underline that it was not possible to model protection standards in the Model layer for coastal floods, due to the lack of essential datasets that resolve the hazard, and therefore the risk in the coastal area. In the absence of spatially-resolved risk information, we cannot apply to the coast an approach similar to the one described for the river flood protection standards in the Model layer."

Reviewer #2: An in-depth discussion on reliability, uncertainty, data acquisition, bottlenecks, etc. would be of high interest.

Authors: We agree that these aspects are important for contextualizing our study and results.

Authors: To the aspects of data acquisition and reliability of the information included, section 2.2 at P 7281 in the original manuscript is dedicated.

Authors: To address the aspect of uncertainty in the information contained in the De-

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sign and Policy layers, the original manuscript included in the database ranges of values, reflecting uncertainty around the actual protection standards, when these were available. Regarding the uncertainty on the adequacy of the Policy and Model layers to represent actual protection as included in the Design layer, we add to the revised version estimates of the root mean square deviation of the values of those proxy layers from the Design layer ones, in Fig. 5 and in the text of Section 4.2, P7289 L16, reading: “... On the other hand, the root mean square deviation of the Policy values (from the Design layer ones) is lower than that of the Model layer values: 764 instead of 832 (or 0.376 instead of 0.503, for the log-transformed data). This means that overall the Policy layer values are closer to the Design layer ones.”

Authors: On the critical point of the bottlenecks, we underline that most of the Discussion section in the original paper revolves around that. There we have proceeded to analyze the limitations and pending issues present in our study from the point of view of: 1) the type of protection it includes; 2) the validity of the proxy layers of information; 3) the need for more data coverage and more reliable data, which is further articulated in a number of strategies to potentially overcome this obstacle.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 7275, 2015.

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