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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Enhancement of large-scale flood damage assessments using building-material-based vulnerability curves for an object-based approach" *by* Johanna Englhardt et al.

Anonymous Referee #2

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This is a very good paper, focusing on the importance of using building-material-based information in the exposure, vulnerability components of large-scale (global) flood modelling efforts.

The paper demonstrates clearly how such work is making significant improvements in flood risk assessment. Another important part is the discussion of spatial capture of urban-rural areas. This merits to also be included in the paper's title.

My review focused more on this aspect of the paper's content. Please see my com-

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Discussion paper

ments in the attached PDF file.

I am concerned that the estimation of the replacement value of the buildings in Ethiopia shows a big urban-rural divide (buildings per capita exposure being 32 times greater in the urban areas vs the rural areas).

Since this paper is applying the proposed methodology to Ethiopia it is very important to use Ethiopia data. It is necessary to revise the entire section "Object-based exposure data" to include review of the 2007 Ethiopia census.

Once this is done it will be also apparent that the section "3.2. Flood risk assessment" also needs to be revised because the building stock distributions of classes I to IV in Ethiopia are quite different to what the authors have probably assumed. In this section a Table of classes I, II, III, III2 and IV distribution of the building footprints in urban and rural Ethiopia used in the model is not shown and this is an important omission.

This part of the work, i.e. the passing from census data to classification of the building vulnerability classes and the building footprints needs to be much more clearly explained than it is in the present version with some additional references for the ImageCat methodology.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-32/nhess-2019-32-RC2-supplement.pdf

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