

## ***Interactive comment on “Assessing road segment impact on accessibility to critical services in case of a hazard” by Sophie Mossoux et al.***

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Comment 1: First, I believe that the title needs to be clearer. I understand that the authors wish to reveal the importance of the analysis of the road networks at the segment level for a strategic risk management in the case of a hazard. But why is necessary to analyze an entire network, when is possible to individualize the possible affected segments? So, my proposal is to modify the title which could have the next form: Assessing “the impact of affected road segment” on accessibility.....

Response: Thank you for this suggestion. We agree that the title could be made clearer.

Changes in manuscript: We propose to change the title as follows: “Assessing the

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impact of road segment obstruction on accessibility to critical services in case of a hazard”.

Comment 2: Secondly, please specify clearer what means road segment? In your paper, you mention individual road segment! It's about the road between the successive villages? Analyzing the maps, it results that the road segment is defined by two nearest road connected villages on the same road. Usually the road segment is a very relative term, connecting two villages at variable distance, or between two different localities.

Response: In our study road segments are defined as the edges between each pair of nodes in the road network. A node corresponds to a location in the road network where two roads cross or come together or to the location of a village or a health service from/to which accessibility is assessed. This is explained in section 3.2, lines 10-13.

Comment 3: Thirdly, the authors should appreciate better the road access vulnerability impact in a case of hazard and to have a general image on a possible disaster, technically speaking, there is the possibility to increase the maps relevance, introducing the population size of the localities.

Response: We are not quite sure what is meant by this remark/suggestion. If the remark refers to the fact that we did not include information on the population size of the villages in the map of accessibility risk (figure 7), we would like to make clear that we did not do so to not overload the maps with information, given the large number of villages. After all, population size of the villages affected is taken in account in the calculation of both indicators. For information on population size of the villages the reader is referred to figure 2. If the remark does not refer to the way accessibility risk has been mapped, then please let us know and provide us more info on the exact meaning of the remark.

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