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Interactive comment on “Flood risk analysis of the Limpopo River basin through past evolution reconstruction and geomorphological approach” by M. Spaliviero et al.

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The general comments (I) provided summarise the purpose of the paper.

As for the specific comments (II) and the related technical issues (III), they are generally sound and the points made are well-taken. However, the authors would prefer to keep the same title which makes a clear reference to flood RISK, and to not modify the text as proposed.

One of the main purposes of the paper is to demonstrate that, without compulsively applying dynamic flood modelling which includes the use of complex mathematical for-

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mulae, it is still possible to come up with a fairly accurate assessment of the potential geographical extent of the floods (the HAZARD) of any large river based on a research of its past evolution, a proper understanding of its geomorphology, consultation with people who suffered from recent floods and, when available, the interpretation of satellite images that show the actual geographical extent of these floods.

Once the potential geographical extent of the floods has been determined fairly accurately, it is easily possible to measure their potential damage (CONSEQUENCES or IMPACT) by just identifying the human settlements (and their population), infrastructure or important assets which are located in the areas that will be affected by the floods.

The only aspect missing to determine the RISK is the likelihood (PROBABILITY) or return time of flood events according to their size/intensity. For a complex river such as the Limpopo, this is rather difficult to determine accurately. The only literature reference found by the authors on the return time of the (world famous) 2000 flood event in the Limpopo is from Smithers et al (2001)*, while studying the hydrological response of the Sabie River catchment (a Limpopo sub-basin located in South Africa). This team of researchers estimated that the return period of such flood events ranged from 50 years to more than 200 years. . . As one can notice, this is not really accurate, and we are not sure that including this reference will add a lot of value to the paper.

* Smithers, J.C.; Schulze, R.E.; Pike, A.; Jewitt, G.P.W. A hydrological perspective of the February 2000 floods: A case study in the Sabie River catchment. *Water South Africa*, 2001, 27, 325-332.

In the proposed paper, we have even tried to go further, when it was possible, by getting an understanding of the actual flood dynamics in the lower Limpopo River during field work, i.e. WHERE (in which critical areas) the floods started, HOW they evolved, etc. (see Fig. 14). We think that due consideration should be given to the amount of detailed geographical information which is provided in the different maps composing the paper, thus to our opinion, the current title (i.e. reference to FLOOD RISK) remains

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acceptable.

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