

Interactive comment on “Towards risk-based flood management in highly productive paddy rice cultivation – concept development and application to the Mekong Delta” by Nguyen Van Khanh Triet et al.

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This paper applies flood modelling to the Mekong delta to determine losses to rice crops. This study builds upon previous modelling studies and methods to estimate damage are adopted from other studies. Overall, the paper is well written and the analysis is good. A major shortcoming of the study is the poor performance of the flood and damage model, and the authors should take care to address the comments related to this topic. I look forward to seeing the revised version of this manuscript.

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Line 18: replace “Therefor’ with “Therefore”.

Figure 2: Fully define WS, SA, and AW crop. I am not sure what these abbreviations mean at this point in the paper.

Page 4, line 34: Provide an interpretation for the EVI values (e.g. in general a low EVI means. . . and a high EVI means. . .).

Page 5, line 29: Please label station Kratie in a figure and reference this figure here.

Page 5, line 33: Here you mention a bivariate copula-based statistical model, although you refer the reader to the original study for further details, please provide in your paper a brief summary of this model (2-3 sentences).

Page 6, line 1: You mention that the model has high computational demands. Provide the average wall clock times of your simulations and computer processor specifications to support this.

Page 7, line 11: Do you mean adopted instead of adapted? If you adapted the stage damage curves, please explain how this was performed.

Figure 6: No need to have three legends and scale bars if all three images are at the same scale and have the same inundation categories. Reduce to one legend.

Page 8, line 19: Remove “huge” from this sentence.

Page 8, line: Here you report “agricultural damages from the National Steering Committee for Flood and Storm Prevention and Control (US\$ 52.8 million)” and compare this to the modelled rice crop loses. Can you clarify if the observed damages only included rice or other crops too. If the later, provide rationale in the text for using this observed damage estimate from various crops to validate your rice damage model.

Page 8, line 21: Define the flood areas index. Also, what is an acceptable FAI, and a poor FAI? Please provide this information in the text.

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Page 8, lines 33-36: Delete these lines, the comparison between modelled and observed inundations and losses somewhat refutes this. You could state this if the model had a better FAI and the model replicated multiple observations (e.g. various flood events) of rice losses.

Page 10, lines 7-12: Why is there a 73% difference between the modelled worst case scenario damages (T100) and observed damages from a 20-year flood? Doesn't it mean that the model is severely underestimating damage? Please explain this difference in the text.

Page 11, lines 37-40: Here you state that a 2D modelling approach would require the implementation of detailed man-made structures and this hinders the adoption of a 2D approach. Can you explain in the text how in contrast your 1D approach easily represented man-made structures.

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