

Interactive comment on “A study of the climate change impacts on fluvial flood propagation in the Vietnamese Mekong Delta” by V. P. Dang Tri et al.

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We would like to thank the reviewer for taking time in reading and suggesting modification to the paper. We found all comments very useful to improve our paper.

Answers to the raised comments are as follows: **General comments** *This manuscript investigates the effects of climate change on the VMD flood dynamics, taking into account future changes in upstream and downstream flows and sea level rise. Thus, the paper is relevant and within scope of the journal Hydrol. Earth Syst. Sci. Discuss. This study is important because it contributes knowledge to the region’s climate change adaptation process. However, I agree with the Referee 1 and 2 that the paper should be revised substantially and my additional comments are as follows:*

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Authors' answer: We would like to thank the reviewer for taking time and evaluating the topic of the paper. We find all the comments of the reviewer useful. We are following the suggested changes so that the manuscript is improved in readability and clarity.

Please find our answers to all raised comments bellow. They are addressed one by one as they are in the interactive discussion.

Comment 1 *The ISIS model used in this study needs to be explained in more details in the “Model set up and data availability” section to make it clearer for the readers who are interested in the topic and the simulated results but have limited knowledge on the modeling.*

Authors' answer: As pointed out by the reviewers the model description need to be extended so that it gives enough details on the discretisation, space step of computation, time step and assumptions made for the different runs. We will include these descriptions in the revised version of the manuscript. We will also include a small description of the ISIS tool, and the types of equations that it solves.

Comment 2 *The authors took the historical flood in 2000 as the baseline since it is the recent highest flood in the VMD. However, in the last decade, many irrigation canals and dykes as well as sea dykes have been constructed; leading to great changes in water flows and floods in some areas (the authors can see the work of Le et al. 2008 as an example). Have the authors verified the model with more recent floods (e.g. flood in 2011)? This factor should be considered in the model because more sea dykes will be constructed in the VMD to protect the region from saline intrusion and sea level rise.*

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Authors' answer: The model is representing the situation of 2000, indeed and the flood of 2011 is not taken into consideration because it was not having the same destructive effect as the flood of 2011. Indeed the dykes will be constructed in the future for flood protection and saline intrusion protection and in the conclusion part of the paper we will mention and make the appropriate connection with the future dyke construction. Thank you for pointing this to us.

Comment 3 *Changes in future flood affect not only agriculture but also aquaculture, one of the major income sources for many people in the VMD. In my opinion the authors should include a brief discussion of the impacts of future flood dynamics on aquaculture. Many publications are available in this topic for the authors' review and discussion purposes*

Authors' answer: In order to discuss about the changes of water resources on aquaculture, it is important to study the water quality. This study is not aiming to address the water quality issues, however we will mention in the final manuscript, in the conclusions about the need to look at this aspect as well.

Comment 4 *Many typing errors, some unclear sentences, inconsistent uses of words (date, abbreviations, citation, legend. . .) are found. Please check the manuscript carefully for the correction these errors.*

Authors' answer: The authors will carefully check the manuscript for abbreviations and typing errors. Moreover we will carefully edit the manuscript for English.

Authors' final remark: All our responses to the questions raised by the reviewer will be included in the revised version of the manuscript.

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