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Discussions

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Interactive comment on "Brief communication: Seasonal prediction of salinity intrusion in the Mekong Delta" *by* Heiko Apel et al.

Anonymous Referee #1

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This communication presents a simple statistical seasonal forecast model to predict the salinity intrusion with a leading time of 9 months. The model is expected to be used as a basis for timely adaptation and mitigation planning, which is urgently needed for the imminent severe salinity intrusion. That is, its outputs serve as a reference for negotiations with the riparian countries to adapt the operation schedule of reservoirs in the Mekong basin to maintain sufficient flow during the dry season for mitigation of the impacts of the expected very low dry season flow in the year to come, as well as sharing the operation information to downstream countries for mitigation planning. The manuscript would become meaningful when the proposed forecast model becomes an operational tool.

1. English language must be significantly improved before the manuscript can be con-

sidered for acceptance. For example, one sentence in the abstract contains multiple grammatical mistakes: "This communication present a simple statistical seasonal forecast model able to predict the salinity intrusion up to 9 months ahead with high skill." The authors are requested to properly take care of the English writing throughout the whole manuscript.

2. Use of in-situ measurements of soil intrusion is considered in the forecast model, while it is rather time-consuming and cost-ineffective. Would the authors comment on the use of remotely-sensed salinity intrusion (e.g. https://doi.org/10.1186/s40645-019-0311-0) in the forecast model?

3. The description about the salinity intrusion is rather comprehensive in the current version of the manuscript. It can be significantly shortened. In contrast, how the proposed forecast model is formulated and works are much less described and thus must be properly enhanced.

4. Figure 1 shows the land use over the Mekong Delta, while it presents the 2010 status. How is the land use over the Mekong Delta changing with time? How does the evolving land use influence on the proposed forecast model?

5. How the human-made disturbance impacts on the water flow from upstream to downstream along the Mekong River should be addressed. The current manuscript only concerns with the impacts of natural disturbance, i.e. climate. Unfortunately, many reservoirs have been constructed over the upstream and have significantly modified the water flow. How such a human-made disturbance factor influences the performance of the proposed forecast model should be clarified before the model can be used for the operational purpose.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2019-276, 2019.