

Interactive comment on “Hess Opinions: Socio-economic and ecological trade-offs of flood management – benefits of a transdisciplinary approach” by Karl Auerswald et al.

Anonymous Referee #1

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This is a nice opinion paper, which discusses the side of effects of structural flood protection. It starts from the recently discussed issue of the safe-development paradox (levee effect) and moves towards a more critical assessment of ecological impacts. The argument is not new, as vast literature is available, but this is a commentary and the main arguments are well supported by the cited literature. Indeed, there is still a major lack of fundamental understanding of these issues, and more transdisciplinary research is needed.

I have two main comments that I hope can help improve this opinion paper. First, I think the paper would benefit from at least a paragraph in which the negative (envi-

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ronmental and social) impacts of structural flood protection are more fairly compared to the positive (economical) effects, e.g. growth or development. Second, as the paper suggests a transdisciplinary research agenda, I think that the authors should be aware that Di Baldassarre et al. (2013) published a paper on the same journal (HESS) arguing for transdisciplinarity for a better understanding of deltas and floodplains as human-environment systems. I also suggest a few more references on the topic that might help the revision of this manuscript.

Suggested references

Burton, C. and Cutter, S. L.: Levee failures and social vulnerability in the Sacramento-San Joaquin Delta area, California, *Nat. Hazards Review*, 2008.

Di Baldassarre, G., Kooy, M., Kemerink, J. S., and Brandimarte, L.: Towards understanding the dynamic behaviour of floodplains as human-water systems, *Hydrol. Earth Syst. Sci.*, 17, 3235-3244, <https://doi.org/10.5194/hess-17-3235-2013>, 2013.

Jahn, T., Bergmann, M., and Keil, F.: Transdisciplinarity: Between mainstreaming and marginalization, *Ecol. Econom.*, 79, 1–10, 2012.

Interactive comment on *Hydrol. Earth Syst. Sci. Discuss.*, <https://doi.org/10.5194/hess-2018-544>, 2018.

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