

Interactive comment on “An alternative approach for socio-hydrology: case study research” by Erik Mostert

Anonymous Referee #1

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I welcome this paper, it attracts attention to an area that has not been well covered in the literature.

But I believe the paper is based on a false or ill-informed premise. By calling it "an alternative approach", the author claims he is proposing something that was not previously known to people working in socio-hydrology. This is false - he might have got this impression from selective reading of the literature. I see that much of the literature he cites is work on the "levee effect". It is true that this research started from conceptual modeling, which were not necessarily inspired from actual case studies or data arising from them.

In reality, there is a branch of socio-hydrology, that on human-environment competition for water in the context of irrigated agriculture. Most/all of these based on real case

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studies. These include the work of Kandasamy et al. (HESS) and Liu et al. (HESS, China). Early papers were data-based historical narratives, which generated ideas and hypotheses, which were followed by modeling studies (van Emmerik et al, HESS, Liu et al., HESS). There were other studies like Elshafei et al (HESS, WRR) which were inspired by previous historical studies/narratives. Chen et al. (WRR, Florida) is another work which combined data analysis and modeling in a real case study. The work of Srinivasan (HESS) was a study that indeed a case study focused on a city, combined with modeling. It also included multiple social actors.

These studies were followed by the review paper of Sivapalan and Bloeschl (2015) who provided guidance to socio-hydrology studies, one element of which was indeed the generation of narratives based on real case studies and expressing these in terms of unexplained phenomena (either local or universal) which will then generate the hypotheses to be explored through modeling studies.

So this is why I said this manuscript is based on a false or ill-informed premise.

Having said that, I will welcome it if the author takes the idea of case studies to expand into territory not well covered in previous studies, including modeling studies. I do completely accept the point that in previous studies the social aspect may have been lumped into one abstract concept of a social variable (flood memory in levee effect papers, community sensitivity). It can be disaggregated into different parts of the social system, which might also include governance systems.

If this is what he wants to do, then by all means illustrate this through an example case study, and demonstrate either conceptually, through modeling or through data analysis, why any conclusions one makes can be seriously impacted by the lumping.

Unfortunately, even when the author presents a case study, the paper goes back to theoretical and philosophical issues and does not deliver anything new that I did not know already. I do not like to more criticism, discussion and philosophy - I want real case studies from which I can learn something that I do not know already. I guess that

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might mean a totally different approach to presenting this paper, more data analyses or building of conceptual models inspired by a real place/case study - this calls for major revision

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