

Interactive comment on “Comment: Getting the Methodology Wrong for Analysing the Hydrological Changes in Watersheds” by Nitin Bassi et al.

M. Sivapalan

sivapala@illinois.edu

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I saw this commentary less than 24 hours ago and was so concerned about it that I wanted to write a response and post it quickly. I didn't realize that by the time I got to it 6 others have already posted responses with similar concerns.

HESS is a serious journal that promotes rigorous research on issues related to hydrologic processes at all scales. The published article by Penny et al. is such a serious article, and presented rigorous analysis that led to the spatial characterization of long-term hydrologic change in the Arkavathy Basin in Karnataka, India – the latest of several published articles by the authors, mostly in HESS. On the basis of these

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analyses the article tried to attribute these changes to a range of climatic and human influences. The methodology presented here is an important contribution to hydrologic change research.

The discussion paper by Bassi et al. is supposed to be a commentary, but it turns out that it is not a serious critique of Penny et al. Instead it comes across as a hit job, seemingly aimed at disparaging the work of Penny et al. and its authors, for unknown (mysterious) reasons. Instead of addressing their comments on the technical content of the paper, the authors have chosen to make unwarranted comments based on frivolous grounds.

I can summarize their main arguments as follows: (1) Penny et al. did not use data that is widely available in the Arkavathy Basin, and misled the readers about the lack of relevant data (2) Penny et al. wrongly claimed that they were the first to analyze hydrologic processes at the watershed, basin and sub-basin scales (3) Penny et al. wrongly used (ungauged) village tanks as the units for water balance analysis instead of (presumably larger) water supply reservoirs which are gauged (4) Penny et al. used assumptions that are wrong or unsubstantiated (5) Penny et al. have a poor understanding of groundwater behavior in this hard-rock aquifer region.

I am not from Karnataka or India, and I do not claim to know the data availability situation there. However, as founding chair of the Predictions in Ungauged Basins initiative, I have interacted with scores of Indian scientists during that decade. The claims about data availability made here are at variance with what I was made aware of. I am suspicious of the claims that there is so much data, and the accusation that Penny et al. somehow were not aware of the availability of these datasets and deliberately misled the readership of the journal. I have not seen evidence of such extensive datasets in the literature – we did an extensive search for published modeling studies around the world for the 2013 PUB Book (Blöschl et al., 2013), but couldn't find many in India. Even if such data were available, their value would be much diminished in the light of the enormous changes that the Arkavathy Basin has undergone in the last 30-40 years.

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How valuable they would be for the “distributed characterization of hydrologic change”, which is the subject of the Penny et al. paper, is even more questionable.

The criticism that Penny et al. somehow claimed that they were the first to analyze hydrologic processes at the watershed, basin and sub-basin scales is false as far as I can see and is clearly unwarranted. To support their arguments Bassi et al. mention a few journal articles, conference abstracts and IWMI and World Bank reports – are these the best examples of process research undertaken in India that they could come up with? For a country the size of India, surely this has to be really extensive.

On the use of the village tanks as building blocks, even a cursory glance of the basin presented in Figure 1 of Penny et al. would tell the reader the presence of a large number of such tanks - they must be an important feature of the heterogeneity. Any serious “spatial characterization” must of course start at that scale, at the very least, even if that poses serious challenges to the methods of analyses, and not at the scale of a small number of water supply reservoirs that are present.

I would not even bother to address the last two of the 5 points above because by this time I became quite convinced that this is not a serious commentary of Penny et al. but is really a personal attack on its authors, as if to make the claim that Penny et al. (who by the way include highly respected, award winning scientists) somehow do not know their surface or groundwater hydrology.

I have a long-standing policy on reviewing journal articles: is there something new that I have learned from reading the article: fundamental knowledge or understanding; knowledge about a place (given that hydrology is mostly a place-based science); a new method that has broad applicability, etc.

What has this discussion paper by Bassi et al. informed me? Absolutely nothing! No new evidence or counter insights are provided. What the authors have tried to do is to disparage the precious (and backbreaking) work of someone else. In the end, though, all they have succeeded in doing is to attract world attention to their ill-disguised

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contempt for good science and acceptable scientific conduct.

This kind of self-serving, uninformed and non-informative article or commentary should not be tolerated in HESS. The open access medium of HESS should not be allowed to launch unwarranted and unsubstantiated personal attacks on fellow scientists.

For these reasons, in my opinion, this paper does not deserve to remain in discussion any more – it should be taken down immediately from the journal website, along with a warning by the executive editors against any such attempts in the future.

M. Sivapalan

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