

Interactive comment on “Evolving water science in the Anthropocene” by H. H. G. Savenije et al.

H. H. G. Savenije et al.

h.h.g.savenije@tudelft.nl

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The referee has gone through the paper with great detail and made very valuable suggestions to improve the readability and quality of the paper. We would like to thank Dr Moffet for these highly valued suggestions, which we have taken up as much as possible. Below we provide answers to the more general issues raised by the reviewer.

1. The reviewer asks for more attention to groundwater. We think that groundwater is part and parcel of the water resources, and we have dealt with it in that way. The difference with surface water is that there are large groundwater stocks, compared to surface water, with very large residence times. The sustainable use of stocks with a large residence time (essentially fossil water at the human scale) is a tricky question and should always be limited to very essential uses only. The sustainable use of renewable groundwater we have addressed by discussing the qanat systems and as an

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integrated part of the water resources available in a catchment. We have made sure that in the text groundwater is recognised as an integral part of the water resources of water resources system.

2. The reviewer would like to see a more chronological order of events, or that at least the timing of developments is better indicated. We fear that a reordering of the paper would negatively affect the structure that we have tried to bring into the paper, but we will try to provide a better historical linkage to the developments portrayed in the paper.

3. The suggestion to include a paragraph on the different trajectories in the developing world. This is an interesting suggestion and maybe it would be a good idea to mention that as a result of the new ideas coined in the Dublin and Rio conference of 1992, and when the political opportunities arose, countries such as South Africa, Zimbabwe and Brasil took the initiative to completely rewrite their water laws based on the latest insights of IWRM, where developed countries found it very hard to make such fundamental shifts within their status quo.

4. About the definition of the starting date of the Anthropocene, we have decided to stick with the definition in the original paper by Crutzen and Stoermer (2000). Otherwise it is indeed a "moving target".

5. The parallel between the emergence of ecohydrology and sociohydrology is indeed not very clear. We agree that sociohydrology has far more complex feedback mechanisms, largely due to the capacity of humans to adjust the environment to their wishes. Humans, as opposed to ecosystems, are more mobile and have the capacity to change their environment by rapid communication, setting up of institutions, developing technology, implementing engineering interventions, establishing economic incentives, etc. This makes prediction within the complex human-water system far less certain than in the ecosystem-watersystem interaction, although also the latter can experience unpredictable system shifts (e.g. Scheffer et al., . . .).

6. Regarding the detailed comments, we shall take these into account as much as

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possible.

We would like to thank the referee again for the detailed reading and the valuable suggestions.

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