

Interactive comment on “Drought in a human-modified world: reframing drought definitions, understanding and analysis approaches” by A. F. Van Loon et al.

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Thanks for your positive evaluation of our paper. In this reply we will shortly discuss your comments. A more detailed reply will follow with the revised version of our paper.

With the statement “gaps in our understanding of the complex interdisciplinary issue that is drought” we meant to refer to the second issue you mention, namely that there are parts of the complex interdisciplinary system that we do not understand. We did not mean to say that most hydrologists do not know that drought is complex. We see that this statement is open for multiple interpretations, especially after the examples we provided. We agree with your explanation that there also is a lack of ontology and semantics (and additionally a lack of two-way communication between stakeholders

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and researchers), which results in a lack of understanding with the general public, policy makers and part of the impact communities. We have not touched upon this issue in our paper, but we certainly agree that it is good to mention. In a revised version of the paper we will rephrase the statement about the understanding of the drought issue.

We certainly support the second point you made about challenges for the current treatment of drought, i.e. the necessary extension of the drought research into including human impacts on drought, human response to droughts, incl. the socio-economic and environmental impacts. This is in line with the main message of the paper. We will stress this even more in the revised document.

We will address your minor points in our review. Here we only want to comment on your second and third point regarding definitions:

- Human activities reducing drought (hazard or impacts) are indeed important. This can be encompassed in the definition of “human-modified drought”, because that means ‘a drought changed by human activities’. We mention on p.4 l.28 that “human-modified drought” is “a drought that is enhanced or alleviated as the result of anthropogenic processes”. This is however not indicated in Fig. 3, which we will adapt to include this alleviating influence of human activities on drought by adding a fourth drought event.

- The normal conditions mentioned in this paragraph do not imply a long-term balance of fluxes. It is not realistic to assume long-term balance of fluxes for any catchment, especially not those with high human influence. With the sentence “the desired situation is out of balance with the normal situation” we mean to say that water demand is higher than water availability. We now realise that this sentence needs some rephrasing to avoid confusion.

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