Hydrology and Earth System Sciences Discussions

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
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Comment on hess-2021-443

Anonymous Referee #1

Referee comment on "Opportunities for seasonal forecasting to support water management outside the tropics" by Leah A. Jackson-Blake et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2021-443-RC1, 2021

This paper presents the findings of a research project into the ability to use seasonal forecasting within water management. This is a topic of great value to water management as highlighted in the introduction. This is a well-written and presented paper, with it being written such that it is easily accessible by non-specialists. I appreciate this paper has a more technical counterpart (Mercado-Bettín et al 2021), however, this paper is lacking some context and information which would strengthen the reader's understanding. My recommendation is that this paper is published after minor revisions.

Major comments

1. Introduction

1) Introduction paragraph 3 (Lines 54- 70). This is a key paragraph that needs expanding upon, rather than just stating what products and who used them but how accurate they are. This information should be used in the discussion sections as well with respect to the outcomes of this paper.

2. Methods

2) Whilst Figure 1 shows the general location of the sites chosen, no further location details are given. Maps of the catchments should be given with elevation.

3) This paper would benefit from more detail of the catchments. A brief description of the catchments land use and how many people the reservoir's supplies.

2.3. Forecasting work-flows

4) Whilst a more detailed description of the ERA5 and SEAS5 data is within the paper (Mercado-Bettín et al 2021). This paper would benefit from a more detailed ERA5 and SEAS5 data description. Firstly, which data sets were used and for which model. Secondly, the spatial resolution of both of the data sets should be stated.

5) Further to the comment above more detail on why the Seas5 and ERA5 data were chosen. Is this because SEAS5 is considered to be the best forecast? If so a discussion of this should be presented in the introduction. Similarly, why was ERA5 reanalysis chosen over other potential local sources of data?

4.0 Discussion: opportunities and barriers for seasonal forecasting to inform water management

6) Do you think the current spatial variation of the SEAS5 data played a part in the inaccuracies in the forecasting tool?