Author's response to the Editor following revisions

EGUSPHERE-2025-837 | Research article

Manuscript Title: Assessment of source regions of the Zambezi River: implications for regional water security.

The authors would like to thank the anonymous reviewers and the editor (Professor Hubert H.G. Savenije) for their time and effort in providing their expert views and comments on the manuscript during the review process.

Public Justification

Dear Authors.

Thank you for extensively replying to the comments of the referees and for modifying the paper in a way that most of the criticism is neutralized. I am willing to accept the paper. Although the two reviewers pointed out that the innovation in the paper is limited, with which I agree, I think that the hydrological community can benefit very much from the detailed field survey that the authors have carried out and the extensive analysis and reporting of their results. They authors provided a valuable hydrographic, geographic and ecological background and literature study of the Zambezi tributaries and, what is most important, provided an insight into a part of the Zambezi that was not surveyed in so much detail before. Even though it was carried out within a short window of time, which does not say much about the longer term or average conditions, I do think it provides a valuable snapshot of the hydrological condition of particularly the Angolan part of the catchment. The paper is well written and well documented, and it has taken the comments of the referees at heart. The paper present a unique data set of detailed and high density observations of river discharge and water quality in previously ungauged and unsampled Zambezi tributaries, which are a welcome addition to the hydrological knowledge of the Zambezi.

I still have a few minor technical issues to address.

1. I think that there is not much justification to add both Fig7a and Fig7b. The are almost identical and their difference is not discussed. So maybe stick with the seasonality graph and remove the occurrence map.

2. in line 635 write 97 km3/yr, because it is a flux and not a stock.

Authors response

Dear Professor Hubert H.G. Savenije

Thank you very much for your thoughtful comments and for accepting our manuscript for publication in EGUSPHERE *Hydrology* and Earth System Sciences. We are sincerely grateful for your careful review and for recognising the value of our fieldwork and reporting on the headwaters of the Zambezi.

We particularly appreciate your public statement, and the decision to select the paper as a highlight, which thoughtfully acknowledges the significance of documenting this largely ungauged and under-studied region. It is encouraging to know that the insights and dataset we provide are seen as a meaningful contribution to the hydrological understanding of the Zambezi basin, especially within the Angolan catchment.

Regarding your remaining technical comments:

We agree that Figures 7a and 7b are very similar and that their differences are not essential to the current discussion. We have removed the occurrence map and retain the seasonality map, as suggested.

We have revised the unit in line 632 to "97 km³/yr" to reflect the correct expression of a flux.

Thank you once again for your support and guidance throughout the review process.

Dr. Mauro Lourenco (on behalf of all coauthors)