

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2022-185

Francis E. Oussou (Referee)

Referee comment on "Evaluating the accuracy of gridded water resources reanalysis and evapotranspiration products for assessing water security in poorly gauged basins" by Elias Nkiaka et al., Hydrol. Earth Syst. Sci. Discuss.,
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This work tackles one of the key scientific questions raised by Bloshl et al (2019) in the 23 unsolved problems in hydrology over Africa. It is a product of a widely shared endeavor toward raising awareness about hydrological basins across Africa and improving our understanding on what has been tagged for long decades as ‘‘ungauged’’ or ‘‘poorly gauged’’ basins. This is a considerable step toward reaching water security and better basin-scale water resources management. The gridded water resources reanalysis (WRR) and satellite based evapotranspiration products are arguably the last hope for rivers’ discharge assessment in most of the basins in Africa despite their well-reported and confirmed uncertainties even in this study. It would be of great interest for the next step to extend this kind of studies to more basins, evaluate more models, and use the machine learning algorithms for prediction of future scenarios in order to provide the policy makers with more reliable tools.

The noticed technical corrections are :

(Page 2, line 39-41) though this statement might seem fairly acceptable, the authors should mitigate a little bit as efforts are made in recent years in some countries especially for rainfall data collect.

(Page 2, line 41) Replace ‘‘Despite’’ by ‘‘Add to’’

(Page 4, line 117-118) This statement is not that necessary and should be removed because previous arguments are enough to mean what the authors intend to say.

(page 4, line 119) The authors should state first the overarching goal of the work and remove this part of the sentence " Focusing on eight basins of different sizes in Africa,..."

(Page 5, line 142) For more clarity, the authors should increase the maps' scale to reasonable level or map each basin separately. If the second option is chosen, the drainage network, some localities, and important water-related infrastructures should be added (if the latter one exists). The coordinates grid of the maps should also be added.

(Page 5, line 145) The source of the population data should be mentioned.

(Page 7, line 181 and Table 1) Based on the fact that the authors got at least some in situ river discharge data for each basin, I would suggest to change the term " ungauged " to " poorly gauged " throughout the manuscript.

(Page 1) There are numerous different ways to evaluate the usefulness of a dataset according to the purpose which could be scientific, economic, social,... Even in the scope of this work, there are many other methods which could be used to achieve the same goal. Therefore, I will kindly suggest to the authors to lessen the ambiguity of the title and modify it a little bit to " Evaluating the accuracy of gridded water resources reanalysis and evapotranspiration products for assessing water security in poorly gauged basins. "

(Page 13, line 338) Omission : most "of the" models.