

Authors' responses to review comments are in **red, bold**

Anonymous Referee #3

The article reports a complete work on the estimation of reference evapotranspiration using Hargreaves and Temperature Penman-Monteith FAO56 equations, introducing calibration in both models. On the basis of the subject matter, the paper falls within the general scope of the Natural and Earth System Sciences Journal. Overall the paper was fairly well written, and it is interested to the Journal readers. The abstract is sufficiently informative. The introduction is well elaborated and documented by numerous and significant references. Materials and methods include a detailed description of the measurements and methods used in the work. Finally, results are sound and justified by the outputs presented in the paper (tables and figures). We advise to introduce some recommendations that would improve the manuscript.

Thank you for your time and work on this manuscript.

Considering that the main source of information is a meteorological database, a detailed explanation of the quality control procedures and validation of the meteorological data used in the study would be necessary (**Done**). In addition, the model calibration section is too concise, and it would be necessary to detail the procedure properly. It would be advisable to include, in addition, an indicator of the performance of the models such as the relative error, ratio between the root mean square error and the average value of the measured variable. (**We included the mean value of daily ETo and the RMSE (mm·d-1) in table 3, we consider that the relative error (%) can be obtained indirectly, but we agree with the review and for a better understanding we have included RMSE (%) in table 3**). The authors do not adequately assess the good behaviour of the Hargreaves-Samani equation in its original version. In many cases, the improvement obtained after the calibration of the model is very small. It is advisable to quantify the improvement that occurs in each of the models after calibration. **OK Included in the text in the paragraph below Table 3**. Finally, a weakness of the paper is that it presents too many results and in many cases a lack of discussion and comparison with other results of similar works. I

recommend a Discussion section independent of the Results. **OK, we have separated both.**