**MAJ-2020-129**

Estimation of Crop Water Requirement for Sugarcane in Coimbatore District using FAO CROPWAT

The main issues to be handled are, in my opinion:

1. The novel contribution of the paper needs to be highlighted better in the paper. In this work little additional methodological development was made. If the novel contribution of the paper is not convincingly described, I would recommend the rejection of the paper.
2. The paper structure, especially in the introduction and methodology, needs to be improved. Results and discussion need to be improved as well.
3. A weak point of the study is the lack of verification of ET with ET validation using some in-situ observation. The validation needs to be explained and if alternative approaches for ET-verification could be found, this would strengthen the paper.
4. It should be explained how systematic effective rainfall was estimated.
5. A more physically based interpretation and selection of the interpolation methods is needed.
6. The conclusions cannot be justified on the basis of the rest of the paper.

The paper contains a great amount of information that needs to be better structured in order to help the reader going through the manuscript’s content and clarify objectives/methodology/results.

The only major issue I found missing in the paper is the lack of a validation procedure for the ET method suggested by the authors. This can be done for a gauged location (or for a small catchment for it the water budget, including ET, is known).

Simulated effective rainfall seems to be unrealistic: a strange peak in October is illustrated but completely ignored by the authors precipitation is highest in June and July and lowest from November to February, as expected”). It poses serious doubts about the accuracy of the simulations, undermining the whole water budget. Lastly, the authors need to define why and how they chose their program in more detail.

The manuscript needs to be thoroughly revised regarding the results presented in this paper.