

Drink. Water Eng. Sci. Discuss., author comment AC1  
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## Reply on RC1

Omololu Ogunseye and Kamar Oladepo

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Author comment on "Performance analysis of a basin-type solar still during harmattan" by Omololu Ogunseye and Kamar Oladepo, Drink. Water Eng. Sci. Discuss.,  
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Reviewer's Comment 01: The paper is about the performance of a solar still during Harmattan in Nigeria, evaluating the effect of various conditions. The topic is of importance since decentralized treatment can contribute to the improvement of safe water supply in rural communities. However, the present study is little novel and does not clearly link the characteristics of the Harmattan season to the (prediction of) the performance of the solar still, also related to operational variables.

Authors Response 01: The reviewer's observations have been implemented based on general and specific comments. Please refer to the general and specific sections of reviewer's comments for authors' responses. Other relevant information and/or formatting has been added to improve the quality of the paper.

Reviewer's Comment 02: Language should be checked by a native speaking person.

Authors Response 02: Comments addressed as suggested.

Reviewer's Comment 03: Redundant and irrelevant information should be avoided.

Authors Response 03: Comments addressed based on reviewer's suggestion.

Reviewer's Comment 04: Introduction starts too general

Authors Response 04: The introduction has been modified to reflect the reviewer's suggestions. See specific comment 5.

Reviewer's Comment 05: Figures 3 and 4 should be combined, and only one example should be given (now all look the same)

Authors Response 05: Figure 3 and 4 cannot be combined even though they fit the same time scale, the parameters displayed on the charts are different. Figure 3 shows the variation of solar irradiation and productivity with daytime while Figure 4 shows variation of temperatures and productivity with daytime. Even though the figures look similar, they are not typical. In our opinion, showing only one example may be misleading.

Reviewer's Comment 06: Figures 5,6 and 7 should be combined

Authors Response 06: This comment has been addressed, Figures 5, 6 and 7 are now combined.

Reviewer's Comment 07: Line 6, a "study" does NOT "investigate"

Authors Response 07: The word "investigates" has been replaced with a more appropriate word "evaluates" as suggested by the reviewer.

Reviewer's Comment 08: Line 7-8, delete sentence

Authors Response 08: Line 7-8 was deleted as suggested by reviewer, but it is our opinion to add part of this sentence to Line 5 to reflect the scope of our work.

Reviewer's Comment 09: Line 12, "modified" is "influenced"

Authors Response 09: Correction implemented based on reviewer's comment.

Reviewer's Comment 10: Line 14-15, explain which insights are gained

Authors Response 10: The insights gained have been summarized in Line 9 to 13 prior to the sentence about insights.

Reviewer's Comment 11: Line 17-21, delete sentences

Authors Response 11: Line 17-21 deleted as recommended by reviewer.

Reviewer's Comment 12: Line 22, delete sentence

Authors Response 12: Line 22 deleted as recommended by reviewer.

Reviewer's Comment 13: Line 23, "significantly low long-term cost" doubtful if that is really true..

Authors Response 13: Word "significant" replaced with "projected" and relevant citation added.

Reviewer's Comment 14: Line 33, "a passive still" does not "occur"

Authors Response 14: Sentence rephrased for clarity based on reviewer's comment.

Reviewer's Comment 15: Line 35-36, delete sentence

Authors Response 15: Line 35-36 deleted as recommended by reviewer.

Reviewer's Comment 16: Line 44-45, delete sentence

Authors Response 16: Line 44-45 deleted as recommended by reviewer.

Reviewer's Comment 17: Line 47-48, delete sentence

Authors Response 17: Line 47-48 deleted as recommended by reviewer.

Reviewer's Comment 18: Line 49, ambient temperature, solar radiation and wind velocity are already "weather conditions"

Authors Response 18: Editorial error, this has been corrected by the authors'

Reviewer's Comment 19: Line 49, "Often investigated operating factors .."

Authors Response 19: Correction implemented based on reviewer's comment

Reviewer's Comment 20: Line 67-68, delete sentence

Authors Response 20: Line 67-68 deleted as recommended by reviewer

Reviewer's Comment 21: Line 68-69, rephrase sentence. Not clear what is meant..

Authors Response 21: Line 68-69 deleted after careful consideration by authors'

Reviewer's Comment 22: Line 77, not clear what is meant by ".. how selected COD parameters may affect productivity and purification efficacy." In addition, "COD" is not properly introduced..(chemical oxygen demand? And why this is relevant for a solar still?

Authors Response 22: COD is an acronym coined for Climatic, Operation, and Design. This was first mentioned in Line 47-48 which has now been deleted based on reviewer's comment. This is not related to Chemical Oxygen Demand as perceived by the reviewer. This sentence has been rephrased for clarity

Reviewer's Comment 23: Use past tenses for own work, e.g., Lines 87, 93, 207 "is" = "was", Line 182 "reaches" = "reached", Lines 186 and 186 "range" = "ranged"

Authors Response 23: Correction implemented based on reviewer's comment

Reviewer's Comment 24: Line 126, why these variables were chosen? Temperature and salinity are "disturbance" parameters and not "operating" parameters.. Better is to evaluate what the effect of "operation" is on varying conditions..

Authors Response 24: These variables were selected because of their possible effect on productivity based on literature review as indicated in Line 46 and 47. The authors agree with the reviewer on these variables as disturbance parameters and reviewer's comment implemented.

Reviewer's Comment 25: Line 129, delete sentence

Authors Response 25: Line 129 deleted as recommended by reviewer

Reviewer's Comment 26: Line 136-137, not clear what is the rational behind the "fast" and "slow" variation

Authors Response 26: Refer to Table 3. The variation is according to the structure of the design of experiment i.e.,  $2^3$  factorial design.

Reviewer's Comment 27: Line 141-142, indicate the make and type of equipment that is used

Authors Response 27: The make and type of equipment used are stated in Table 2 and as referenced in Line 143.

Reviewer's Comment 28: Line 142-146, delete sentences

Authors Response 28: Line 142-146 deleted as recommended by reviewer.

Reviewer's Comment 29: Line 162, discuss in the context of other studies

Authors Response 29: The authors haven't identified other studies where the quantitative technique was used to verify the difference in productivity of two solar stills fabricated using the same materials and operated simultaneously under similar conditions. The authors used this technique for fabrication assurance.

Reviewer's Comment 30: Line 253, explain figure 8a better and introduce  $x_1$ ,  $x_2$ ,  $x_3$ ..

Authors Response 30: Figure 8a reformatted with additional information and the variables  $X_1$ ,  $X_2$ ,  $X_3$  properly introduced as suggested by reviewer.

Reviewer's Comment 31: Line 255-256, the effect depends on the range that was chosen, so not a fair comparison..

Authors Response 31: The range that was chosen by the authors reflect the likely operating levels as indicated in line 127 since it is impossible to evaluate all the possible points in the range. The author's intent was to evaluate the productivity as selected factors changed from one level to another, not necessarily comparing. This is shown Figure 8b. Increasing the range of the water depth for instance is unlikely to increase productivity.

Reviewer's Comment 32: Line 257, delete sentence

Authors Response 32: Line 257 deleted as recommended by reviewer.

Reviewer's Comment 33: Line 258-260, delete sentence from "in contrast" onwards..

Authors Response 33: Line 258-260 deleted as recommended by reviewer.

Reviewer's Comment 34: Line 269, delete sentence

Authors Response 34: Line 269 deleted as recommended by reviewer.

Reviewer's Comment 35: Line 272-285, delete entire section (not relevant)

Authors Response 35: Line 272-285 deleted as recommended by reviewer.

Reviewer's Comment 36: Line 288, discuss the reason for pH reduction

Authors Response 36: Discussion on the possible reason for pH reduction has been added as suggested by the reviewer.

Reviewer's Comment 37: Line 288-289, delete sentence

Authors Response 37: Line 288-289 deleted as recommended by reviewer.

Reviewer's Comment 38: Line 299-301, delete sentences

Authors Response 38: Line 299-301 deleted as recommended by reviewer.

Reviewer's Comment 39: Line 313-317, delete sentences

Authors Response 39: Line 313-317 deleted as recommended by reviewer.

Reviewer's Comment 40: Line 322-324, delete sentence

Authors Response 40: Line 322-324 deleted as recommended by reviewer.