

## ***Interactive comment on “Critical review of the application of SWAT in the upper Nile Basin countries” by A. van Griensven et al.***

**A. van Griensven et al.**

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Dear Martin,

First of all, many thanks for the nice comments and the good suggestions. Below you find a report on how we have been taking care of all the comments.

Kind regard,

Ann van Griensven & co

Page 3762: Abstract: line 1: “..integrated river basin model” instead of hydrological simulation tool”

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RESONSE: done

line 5: Better land use change consequences or impacts (instead of land use modelling)? Otherwise it could imply that is used for land use scenario development.

RESONSE: done

line 6: “..clustered”? I guess you mean that the majority of the studies are focused in the tropical highland? I think “focused” would better fit here, or?

RESONSE: Changed to ‘located’

Line 8: I would use “appropriate” or “feasible” instead of knowledgeable. You could also a hyphen after this sentence and add “which is also a consequence of the quality of the available free database in these regions”. Just a suggestions.

RESONSE: changed to appropriate

line 15: “A number of criteria are used..” Add here “in the reviewed studies, because one could think that you used these criteria to evaluate the models / studies. Just to be clear.

Response: we added “To evaluate the models that are described in journal papers,”

line 20: “Several papers also...” Did they report unrealistic parameter values or did they use unrealistic parameter values?

Response: We could only discuss what they reported, and then we assume they used these. We rephrases the sentence.

line 22: “..., it is difficult to give...” It is not your duty to give an overall positive evaluation - I would change the wording here, something like “have to be evaluated critically” would fit better, I guess.

Response: Done

Page 3763: Abstract (continued) line 1/2: Remove “try to” line 3/4:

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RESPONSE: done

Write "predictions of future environmental changes" instead of "predictions of the future.." line 7: You could add a sentence stating that it should be aimed at the generation of common model parameter databases and simulation results for the Nile basin.

RESPONSE: done

Page 3763: Introduction lines 10 to 19: I would avoid to use too much listings. Try to shorten that part, perhaps you could refer to a table or a reference (Arnold, Gassman, etc.)

RESPONSE: The authors think that this section is still relatively short description for the SWAT model.

Page 3764: Introduction (continued) line 14: I would add a sentence here that states the great importance of the Nile basin for water availability, climate, ET, etc. It would underline the importance of your study (see intro of my review above). It could also be helpful to introduce to the structure of your paper.

RESPONSE: Good suggestion! Done.

Page 3764: Case study and model descriptions line 15 (title): I would change the title to "Case study and review process". You could add here a short introduction to the structure of the following chapter and sections.

RESPONSE: This suggestion was not followed, because the review process is described in chapter 3. However, we gave an overview of the structure in the paper at the end of the introduction.

Add 2.1 The Upper Nile Basin.

This was added to title 2

Page 3765 line 10 to 14: I would move that section to the new point 2.0 Case study

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and review process), see above. Done

Page 3765: Model calibration, .... line 28: write "...one-factor-at-a-time (LH-OAT).."

Done

Page 3766: line 21 to 25: Please change wording.

Done

Page 3767: Land use change line 10: Section title: I would add "impacts" or "consequences" after "changes".

Done

Page 3771: Evaluation criteria line 10: I would write "The appropriateness of the models in the reviewed papers is..." In addition, I would introduce to the structure of the following chapter. To be honest, I had at first some problems with the structure, since the titles / criteria of the sub-sections 3.1 to 3.3 are repeated in the next chapter - which makes of course sense, but on the other hand it can be confusing for some readers to read the same titles in two different chapters. Perhaps you could think about restructuring and merge the two chapters. But finally, it is up to you. Just think about it.

RESPONSE: We adjusted the sub-titles in chapter 2 and 3 as merging 2&3 would not have solved the confusion.

Page 3780: line 3 to 4 (second point): I think you should also add the soil physical parameters here.

RESPONSE: You're right, done.

line 13 to 15 (sixth point): I would cite here somewhere the work of Arnold et al. (2010) and Bosch et al (2010) here where the authors present the idea of the SWAT landscape version.

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Arnold, J.G., P.M. Allen, M. Volk, J.R. Williams & D.D. Bosch (2010): Assessment of Different Representations of Spatial Variability on SWAT Model Performance. Transactions of the ASABE 53(5), 1433-1443. Bosch, D.D., J.G. Arnold, M. Volk & P.M. Allen (2010): Simulation of a Low-Gradient Coastal Plain Watershed using the SWAT Landscape Model. Transactions of the ASABE 53(5), 1445-1456.

RESPONSE: The references have been added

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