

Interactive comment on “Hydrological impact of rainwater harvesting in the Modder river basin of central South Africa” by W. A. Welderufael et al.

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Received and published: 22 August 2011

Comment 1: The model setup and configuration Response: All comments and suggestions given by the referee (including the annotated manuscript) have been accepted and addressed in the revised manuscript.

Comment 2: The calibration is inadequate. Response: We obtained six years (2002–2006) observed daily mean flow data for the gauging station C5H056 which recorded the streamflow for the 419 km² sub-catchment inside C52A catchment. But, as we mentioned in the manuscript, we found that only the year 2002 data to be reliable for our purpose. So, we used this data to optimize or calibrate those parameters which were found most sensitive (ranked 1 to 7) to the streamflow. This has improved the
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prediction of the streamflow during 2002. A remarkable improvement was achieved graphically which is also presented in statistical test in the text when the year 2002 daily stream flow was simulated by using the calibrated values. Of course, it would have been nice to have a validation test to get more confidence on the model in predicting the real situation. Unfortunately, we were not able to do the validation test due to the unreliability in the data. Therefore, by considering the suitability of SWAT in predicting the streamflow of ungauged streams, the result that was obtained without doubt yielded at least a relative comparison among the water balances of the different land use scenarios.

Comment 3: the interpretation of the simulated results needs more depth of analysis Response: Comment accepted and an in-depth interpretation and analysis of the simulated results have been given in the revised manuscript.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 5051, 2011.