

## ***Interactive comment on “A coupled modeling framework of the co-evolution of humans and water: case study of Tarim River Basin, western China” by D. Liu et al.***

**A. Kleidon (Editor)**

akleidon@bgc-jena.mpg.de

Received and published: 27 August 2014

This is an interesting paper on the coupling between hydrology and society in western China. The second review by Salvatore Manfreda made some substantial and constructive points on improving the manuscript, including a better presentation of the model and about the number of model parameters. I fully agree with his assessment that the manuscript requires a revision to address these issues.

Specifically, when you revise the manuscript, I suggest that in addition to the reviews you:

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1) move the detailed model description and tables of parameter values to an appendix and only focus on the essential model components and linkages in the main text. This will make the manuscript more readable to the readers.

2) reduce the number of model parameters. If you set some parameters to 1, throw them out of the documentation because you do not need them (unless you demonstrate and discuss their importance, but I did not see this in the manuscript).

3) evaluate the sensitivity of the model to some of the parameters. This is important to do so that one can understand which of the many parameters critically affect your model results, and which ones do not.

4) the results associated with Fig. 12 and 13 should be moved to the results section. For these scenarios, it would also be important to find out how robust the simulations are and which parameters are the most important to affect the result.

I think that these points need to be addressed and will, obviously, require some work. However, I believe that these revisions will improve the manuscript and make the insights more accessible to the reader. I look forward to seeing the revised version of the manuscript.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 3911, 2014.

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