

Interactive comment on “Climate change, vegetation restoration and engineering as a 1 : 2 : 1 explanation for reduction of suspended sediment in southwest China” by X. Ma et al.

Anonymous Referee #1

Received and published: 7 December 2013

Comments on paper: “Climate change, vegetation restoration and engineering as a 1:2:1 explanation for reduction of suspended sediment in southwest China” by M.X et al. 2013

General Comments

The paper is very interesting for readers from interdisciplinary subjects. But it is a significant contribution to the field of sediment research. Compound factors for impacts on all subject: sediment, vegetation, and reservoirs, all factors should be attributed by impact models. This paper illustrated a detailed procedure to separate different

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contributors. I recommend to accept after minor revisions.

Comments:

1. The title should be more specific to focus on the study catchment or river basin. Currently, the southwest China indicates too large area as each watershed is unique with various changes in sediment load and different controls from variables.
2. “Recombining climate change and land cover change” in Page 9 3.5 should be shifted to the heading like “differentiating the effects of different controls”
3. SWAT model use MUSLE for soil erosion estimate. MUSLE has a few factors including on rainfall, soil, slope, slope length, vegetation, and soil conservation. It was not clear how soil erodibility or K values and topographical factors or LS values were determined. Please clarify and describe in details how these three factors were determined. For example, soil erodibility (K) needs soil texture, organic matter, and soil infiltration information. How these variables were determined was not clear in the paper.
4. When talking climate change, it also includes especially temperature changes. The paper did not have much information how temperature change affects sediment yields. It is not easy to include temperature in the model as a standalone variable, but it is useful if this can be discussed somewhere in the paper. There is literature, e.g. Zhu YM et al. in Geomorphology, and Global and Planetary Changes, have detailed investigations on temperature and sediment for a river basin in Yunnan, Jinshajiang, and in the Yangtze River in China.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 12417, 2013.

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