

Interactive comment on “Effects of cultivation and reforestation on suspended sediment concentrations: a case study in a mountainous catchment in China” by N. F. Fang et al.

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Point-by-point responses to the reviewer's comments/questions: Dear reviewer #3: General Comment: I found the paper of interest, well written and also with interesting findings. My comment is first for a technical question... I suggest that you will improve the figures as your findings are of high interest and you are telling us a nice story, but you need better figures to make your paper easy to read. A second comment is that your discussion needs to bring the results of other researchers to the discussion and show what they found in other parts of the world, and to show how similar is to what you found There is a clear reduction of the river discharge and you should tell

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this to the audience Also that the land use is the key factor... Reply: Thank you very much for your time on our manuscript. We have redrawn Figure 3, 4, 5, 6, 7 and 8 in the revised manuscript. We have added more discussion and results of other studies. Such as: “Land use/cover has been widely documented to have dire environmental consequences through their adverse impacts on soil and water qualities (Zhang et al., 2015). Olang et al (2011) indicated that 40% and 51 of forest and agriculture land respectively revealed reduced runoff volumes by about 12%, while 86% land cover of agriculture increased runoff volumes by about 12 %. Buendia (2015) et al studied the effects of afforestation on runoff at a Pyrenean Basin (2807 km²), with forest of sub-basin increases ranging between 19% and 57%, forest cover can account for ~40% of the observed decrease in annual runoff. Liu et al (2014) demonstrated that afforestation leads to increased runoff in dry seasons in Yarlung Zangbo River basin. Borrelli et al (2013) illustrated that a disturbed forest sector could produce about 74% more net erosion than a nine times larger, undisturbed forest sector.” The relevant references: Buendia, C., Batalla, R. J., Sabater, S., Palau, A., and Marcé, R.: Runoff Trends Driven by Climate and Afforestation in a Pyrenean Basin, Land Degrad Dev, Article in Press. DOI: 10.1002/ldr.2384, 2015. Borrelli, P., Marker, M., and Schutt, B.: Modelling Post-Tree-Harvesting Soil Erosion and Sediment Deposition Potential in the Turano River Basin (Italian Central Apennine), Land Degrad Dev, 26, 356-366, 10.1002/ldr.2214, 2015. Cerda, A., and Doerr, S. H.: Soil wettability, runoff and erodibility of major dry-Mediterranean land use types on calcareous soils, Hydrol Process, 21, 2325-2336, 10.1002/hyp.6755, 2007. Liu, Z., Yao, Z., Huang, H., Wu, S., and Liu, G.: Land Use and Climate Changes and Their Impacts on Runoff in the Yarlung Zangbo River Basin, China, Land Degrad Dev, 25, 203-215, 10.1002/ldr.1159, 2014. Olang, L. O., Kundu, P. M., Ouma, G., and Furst, J.: Impacts of Land Cover Change Scenarios on Storm Runoff Generation: A Basis for Management of the Nyando Basin, Kenya, Land Degrad Dev, 25, 267-277, 10.1002/ldr.2140, 2014. Zhang, F., Tiyyip, T., Feng, Z. D., Kung, H. T., Johnson, V. C., Ding, J. L., Tashpolat, N., Sawut, M., and Gui, D. W.: Spatio-Temporal Patterns of Land Use/Cover Changes over the

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Past 20 Years in the Middle Reaches of the Tarim River, Xinjiang, China, Land Degrad Dev, 26, 284-299, 10.1002/ldr.2206, 2015.

Please also note the supplement to this comment:
<http://www.hydrol-earth-syst-sci-discuss.net/12/C4638/2015/hessd-12-C4638-2015-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 7583, 2015.

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