

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.

Anonymous Referee #3

Received and published: 7 October 2015

Dear author (and editor), 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 this to the audience Also that the land use is the key factor... see below some references will help you to make your paper more attractive

the land abandonment reduce the sediment and water losses... this is good example see below Keesstra, S.D., Bruijnzeel, L.A., van Huissteden, J., 2009. Meso-scale catchment sediment budgets: combining field surveys and modeling in the Dragonja catchment, southwest Slovenia Earth Surface Processes and Landforms 34: 1547-1561. DOI: 10.1002/esp.1846 Keesstra, S.D., 2007. Impact of natural reforestation on floodplain sedimentation in the Dragonja basin, SW Slovenia. Earth Surface Processes and Landforms, 32(1): 49-65. DOI: 10.1002/esp.1360 Keesstra, S. D., Kondrlova, E., Czajka, A., Seeger, M., & Maroulis, J. (2012). Assessing riparian zone impacts on water and sediment movement: a new approach. Netherlands Journal of Geosciences, 91(1-2), 245-255. DOI: http://dx.doi.org/10.1017/S0016774600001633 Keesstra, S.D., Bruijnzeel, L.A., van Huissteden, J., 2009. Meso-scale catchment sediment budgets: combining field surveys and modeling in the Dragonja catchment, southwest Slovenia Earth Surface Processes and Landforms 34: 1547-1561. DOI: 10.1002/esp.1846 L.ÅŁO. Olang, P.ÅŁM. Kundu, G. Ouma and J. Fürst 2014 . IMPACTS OF LAND COVER CHANGE SCENARIOS ON STORM RUNOFF GENERATION: A BASIS FOR MANAGEMENT OF THE NYANDO BASIN, KENYA LAND DEGRADATION & DEVELOPMENT Volume 25, Issue 3, May/June 2014, Pages: 267–277, , DOI: 10.1002/ldr.2140 Ceballos, A. Cerdà, A. & Schnabel. 2003. Runoff production and erosion processes on a Dehesa in Western Spain. Geographical Re-view, 3, 333-353.

The land use and the river responses

Borrelli, P., Märker, M., & Schütt, B. (2015). MODELLING POST-FOREST HARVESTING SOIL EROSION AND SEDIMENT DEPOSITION POTENTIAL IN THE TURANO RIVER BASIN (ITALIAN CENTRAL APENNINE). Land Degradation & Development, 26, 356-366. DOI: 10.1002/ldr.2214 Zhang, F., Tiyyip, T., Feng, Z.D., Kung, H.-T., Johnson, V.C., Ding, J.L., Tashpolat, N., Sawut, M., Gui, D.W. Spatio-Temporal patterns of land use/cover changes over the past 20 years in the middle reaches of the tarim river, Xin-jiang, China (2015) Land Degradation and Development, 26 (3), pp. 284-

HESSD

12, C4136–C4139, 2015

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

C4137



299. DOI: 10.1002/ldr.2206 Liu, Z., Yao, Z., Huang, H., Wu, S., Liu, G. Land use and climate changes and their impacts on runoff in the Yarlung Zangbo river ba-sin, China (2014) Land Degradation and Development, 25 (3), pp. 203-215. Cited 8 times. DOI: 10.1002/ldr.1159 Bisantino, T., Bingner, R., Chouaib, W., Gentile, F., Trisorio Liuzzi, G. Estimation of runoff, peak discharge and sediment load at the event scale in a medium-size mediterranean watershed using the annagnps model (2015) Land Degradation and Development, 26 (4), pp. 340-355. Cited 1 time. DOI: 10.1002/ldr.2213 Zema, D.A., Denisi, P., Taguas Ruiz, E.V., Gómez, J.A., Bombino, G., Fortugno, D. Evaluation of Surface Runoff Prediction by AnnAGNPS Model in a Large Mediterranean Watershed Covered by Olive Groves (2015) Land Degradation and Development, . Article in Press. Cited 1 time. DOI: 10.1002/ldr.2390

Buendia, C., Batalla, R.J., Sabater, S., Palau, A., Marcé, R. Runoff Trends Driven by Climate and Afforestation in a Pyrenean Basin (2015) Land Degradation and Development, . Article in Press. DOI: 10.1002/ldr.2384

this is found at pedon and slope scales and the land use is the key factor

Adimassu, Z., Mekonnen, K., Yirga, C., Kessler, A. Effect of soil bunds on runoff, soil and nutrient losses, and crop yield in the central highlands of ethiopia (2014) Land Degradation and Development, 25 (6), pp. 554-564. DOI: 10.1002/ldr.2182

Li, X.H., Yang, J., Zhao, C.Y., Wang, B. Runoff and sediment from orchard terraces in southeastern China (2014) Land Degradation and Development, 25 (2), pp. 184-192. Cited 3 times. DOI: 10.1002/ldr.1160 Gessesse, B., Bewket, W., Bräuning, A. Model-based characterization and monitoring of runoff and soil erosion in response to land use/land cover changes in the modjo watershed, Ethiopia (2014) Land Degradation and Development, DOI: 10.1002/ldr.2276

Cerdà, A., Doerr, S.H. Soil wettability, runoff and erodibility of major dry-Mediterranean land use types on calcareous soils (2007) Hydrological Processes, 21 (17), pp. 2325-2336. Cited 94 times. DOI: 10.1002/hyp.6755

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

HESD

12, C4136–C4139, 2015

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

C4139

