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Interactive comment on "Sediment trap efficiency of paddy fields at the watershed scale in a mountainous catchment in Northwest Vietnam" *by* J. I. F. Slaets et al.

Anonymous Referee #1

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General Comment The manuscript deals with sediment fluxes and budgets of paddy rice areas at watershed scale which are not studied enough in the mountainous south-east Asia and published much in the literatures. And the paper has significant contribution on how to track the type sediment texture in the landscape. It is based on primary field data with appropriate analysis procedure to achieve the objective of the paper. The data in this paper are carefully collected, well described, analyzed and interpreted accordingly. The measurement points are also professionally selected and used to identify the influence of each part of the sub-watershed. It is also written in simple language to understand easily and I found it very good. Here under I put comments by each section that may improve the paper readability. One of my general comment on

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Discussion Paper

the manuscript is the assumption of Hortonian overland flow from the contributing upland area to the paddy fields. On what bases are these assumption is made? Specific comment: Introduction Page 20438 line 24: is it Bray, 1996 or 1994? Page 20438 line 26: Put Dobermann, 1998 in the reference list. Page 20439 Line 19 and 20: There may be a disagreement between the sentences “paddy systems have located in the valleys” and “60% paddy cultivation is located in such hilly areas”. Page 20439 Line 21: what does it mean traditional shifting cultivation system? you may need to define some of the terms in your manuscript for those readers outside of Southeast Asia. Page 20439 Line 28: The erosion in the study area is too much with 174 ton per ha. What is the texture of the soil on the agricultural fields?

Materials and Method The material and method section need to be clear about the number of samples collected for each analysis. In the result section, you reported the number of data without telling in this section those quantities. Page 20442 Line 23-27: During a manual water sampling, do you have a specific time interval you followed during the rainfall event? every 10, 20, 30 minutes? why you want to take two 500ml bottles? Page 20444 Line 19: why the assumption of irrigated discharge to the paddy fields are the same before and after the rain? While there is rain, the amount of irrigated discharge from reservoir should be less? Page 20444: what is the computation time interval for equation 1 and 2? daily? or what time scale? Page 20446: is equation 6 used to estimate the sediment load from overland flow? If this is the case, please say it within the section. Page 20447: I am not clear about sources of sediment samples for the texture analysis mentioned in section 2.6? and how they are sampled? Page 20447: It is better to write the long forms of the acronyms QUANT2 and OPUS in addition to their short forms. Results Page 20448 line 10: why irrigation pattern difference if you assume the irrigation discharge is the same before and after rain? On page 20444 line 19, you assume the same discharge. Discussion Page 20 line 2: mention USDA, 2012 in the reference list. Page 22 line 11: is it Keil et al., 2009 or 2008; different in citation and in reference. Page 22 line 13: is it Dung et al., 2008 or 2009; different in citation and in reference. Table Table 1: It would be better to show the eqns (for stage-

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discharge and suspended sediment concentration) than simply showing the n and R2 value Table 2: How did you determine the texture of sediment fro overland flow? Table 3 and 4: Balance are not ok for some columns because of may be digits Figures Figure 2: the x-axis legend is missing. Figure 2 and Figure 5: the y-axis for flows should be in mm so that one can compare with the rainfall measurements. and what is the negative axis is telling?

Interactive comment on Biogeosciences Discuss., 12, 20437, 2015.