

## ***Interactive comment on “Improvements in aggregate stability of recently deposited sediments supplemented with tea waste and farmyard manure” by B. Turgut and B. Köse***

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Thank you very much for your kind comments on our manuscript. The following are our responses to your comments:

C1: I cannot understand well the election of that sediment for the study, is that sediment a potential material to be used as a soil? Where? In situ? Is necessary that sediment to be restored?

R1: This concern is a very valid one. In the first draft we did not clearly state why the sediments were selected as the study material. While they are not 'soils' they may become a potential agricultural medium in this region in near future. This concern was

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addressed in the introduction (page: 3, Line: 18-29) and given following paragraph.

“Aggregate stability was found to be over 40% in studies conducted over degraded soils (Hernández, García and García, 2015, Khaliq and Kaleem Abbasi, 2015, Mukherjee, Lal and Zimmerman, 2014), and this is much higher in those found in studied RDS. Therefore, RDS can be considered as a special case of extremely degraded soils. In accordance, the practices that improve aggregate stability in RDS can also be suitable, and probably more effective, in improving extremely degraded soils. Although aggregate stability is improved mainly through the application of farmyard manure, fewer information is available on the effect of tea waste on aggregate stability. Thus, our hypothesized were that (i) the aggregate stability would be improved by application of the tea waste, (ii) the effect of tea waste and farmyard manure on aggregate stability would be different, (iii) the aggregate stability would be influenced by the application rates and (iv) elapsed time after organic material application of both farmyard manure and tea waste would change the aggregate stability. It is expected that increased aggregate stability after tea waste application on recently deposited sediments (RDS) can improve the physical properties of degraded soils.”

Potential benefits of improving aggregate stability in RDS is addressed in the conclusion (Page: 7, Lines: 17-24) and given following paragraph.

“In practice the significance of the findings is two fold. First, in areas with steep topography such as Artvin, where new agricultural plots are created by terracing and suitable soil resources are very scarce for this practice, fine grained sediments can be a good source of plantation medium with added organic amendments. Both tea waste and farmyard manure are abundant in this region because of its proximity to tea plants and cattle-raising farms. Second, sediment accumulation reduces water storage capacity of dam reservoirs, and thus the benefits of a dam. Removing sediments from reservoirs for agricultural purposes can help in increasing the sustainability of the benefits expected from a dam.”

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C2: Authors mentioned that sediment can be considered a degraded soil. I disagree, a sediment is a necessary material in a weathering, erosion process, : : ., all this should be discussed more in depth and justified.

R2: "so sediments are a good example for degraded soils" was changed with "Therefore, recently deposited sediments can be considered as a special case of extremely degraded soils".

C3: In some parts of paper they talk about sediment as the material used, in another places as soil. Can that recent sediment be considered a soil? Please justify and be consistent with the term used in manuscript.

R3: In the manuscript, "soil" terms were changed with "recently deposited sediment" and were abbreviated as "RDS".

C4: I am not English native speaker but I found many mistakes in English, a native speaker before submission must revise this.

R4: Manuscript was revised by a native speaker, and grammatical errors were corrected.

C5: This experiments use 2 types of organic wastes. Where are the analyses of the 2 organic wastes? Their characterization is necessary for this kind of research.

R5: Table 3 was added included some characteristics of tea waste and farmyard manure.

C6: Experimental design: Only 2 replicates per dose and treatment, I think 3 should be the minimum.

R6: Due to lack of places in green house, study was conducted in two replications. The most important problem encountered in the two replications experiment is the high rate of error. But when the experiment carried out carefully in controlled condition, error can be minimized.

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Interactive comment on Solid Earth Discuss., 7, 2037, 2015.

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