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Interactive comment on "Geomorphic Threshold Estimation for Gully Erosion in the Lateritic Soil of Birbhum, West Bengal, India" *by* Sandipan Ghosh and Sanat Kumar Guchhait

Anonymous Referee #1

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Although the manuscript exhibit a high level of scholarship and original research that contributes to the field (especially the measured data needed in models), authors will need to undertake substantial grammatical revision and proof-reading. The authors in consultation with a qualified editor will need to undertake necessary grammatical revision.

Secondly, the manuscript provides context by stating that threshold conditions of gully initiation has not been performed in India. However, besides having a different location, the manuscript needs to provide more context with regards to other international studies, by stating (specifically) what about this study (methodology and/or results) are different or similar or applicable to other studies in other countries.

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Discussion paper

Some parts of the Results and Discussion, especially the sub-headings 3.5 and 3.6 should be rephrased to read as results and discussion (not read as methodology as is the case currently).

The soil erosion work cited by the authors are impressive, which include both new and older classic references. The authors correctly indicate that there are a wide range of threshold conditions or values (thresholds of hydraulic, rainfall, topography, lithology and land use – land cover control etc.) which are responsible for the initiation of gullies in different environments. Three other studies that did pioneering work in this regard includes:

Kirkby MJ, Bull LJ, Poesen J, Nachtergaele J, Vandekerckhove L. 2003. Observed and modelled distributions of channel and gully heads – with examples from SE Spain and Belgium. Catena 50 (2-4): 415-434. Desmet PJJ, Poesen J, Govers G, Vandaele K. 1999. Importance of slope gradient and contributing area for optimal prediction of the initiation and trajectory of ephemeral gullies. Catena 37: 377–392. Kheir RB, Wilson J, Deng Y. 2007. Use of terrain variables for mapping gully erosion susceptibility in Lebanon. Earth Surface Processes & Landforms 32: 1770–1782.

With so many citations the manuscript is probably exceeding the prescribed length of the journal. The first 3 paragraphs in Introduction (explains erosion as environmental problem) can be shortened.

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