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Interactive comment on "Assessment of uncertainties in soil erosion and sediment yield estiamtes at ungauged basins: an application to the Garra River basin, India" *by* Somil Swarnkar et al.

P. Panagos

panos.panagos@ec.europa.eu

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HESS – Uncertainties of soil erosion in Garra River, India.

This can be an interesting article if authors carefully address some improvements in uncertainties of erosion factors.

In the current study the erosivity factor (R-factor) has high uncertainties. I am not in favour of functions which estimate erosivity based on annual of monthly rainfall values (you can see the low quality results with large pixels in R-factor). Currently there is an

increasing availability of high temporal resolution rainfall data which allow to estimate rainfall erosivity according to the principles of USLE/RUSL/e. The recent publication and data availability of Global Rainfall Erosivity has demonstrated this and there are about 250 stations with measured R-factor in India.

Regarding soil erodiblity, the recent developments show that also soil structure and Stoniness should be taken into account. Moreover, an additional source of uncertainty has to do with interpolating methods (how did you produce surface maps from the K-factor measurements) and the high organic carbon soils (there is literature about how to interpolate K-factor and how to face the issue of high soil organic carbon).

In the topographic factor, authors do not discuss the pixel size issue. There much higher uncertainty when LS-factor is calculated with pixels of 90m resolution compared too much higher resolution of 25m (all this has been discussed in European application of LS-factor). Moreover, I see values of LS-factor = 2465 .This is impossible for soil coverages.

The cover management factor is the most uncertain in USLE applications. In the manuscript it is not clear (Table 3c) how you got those C-factor ranges and how you calibrate at pixel level? The use of remote sensing on vegetation density may help you on this.

Also how did you find the P-factor values? The literature has quite different values. The first concluding remark is not valid. this is obvious! The soil erosion map could have at least 6-7 classes to show a clear distinction between low erosion , low medium , medium, high , severe, etc (with colours from Green to Red).

Tables should be self-explained. I don' agree with the current structure presenting the equations in the table and having the factors and annotations in separate page. It is not easy for readers.

I call the authors to take into account the above mentioned comments and improve

both the model estimates and the manuscript.