

## ***Interactive comment on “A comprehensive biogeochemical record and annual flux estimates for the Sabaki River (Kenya)” by Trent R. Marwick et al.***

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Anonymous Referee #2

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Below, we provide a point-by-point reply to the referee comments and suggestions, indicating if and how these were addressed in the revised version of our manuscript. We thank both reviewers for comments and suggestions that help us clarify the content of the manuscript.

REF: This is a well-structured and clearly written paper presenting a 2-year record of

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biogeochemical data from a drainage basin in Kenya. The paper is more constrained than the title suggests but the authors provide a full description of the trends observed and place this in the context of other studies. Given the focus of the paper, I feel that in its present form it is overlong, and would benefit from a more selective use of the literature: the introduction could be halved in length, with more emphasis on areas of novelty addressed by the paper, and providing clear aims / objectives. This is also scope to reduce the Discussion in length, but this should include a clearer statement of the significance of the work for readers. Overall I think the study is appropriate for publication in this journal, although in a revised paper, the authors might want to consider:

REF: i. Providing more detail on sampling protocols, processing and the timing of laboratory analyses;

REPLY: We have provided a few minor details on methodology of sampling and sample processing, but do not really see where we could expand without getting lost in detail.

REF: ii. Considering wider temporal trends (i.e. how representative are the two years of study);

REPLY: Valid question, but we do not feel we have the data to say something meaningful, we have now included a sentence mentioning that obviously, our estimates are only a snapshot and that one could expect strong inter-annual variability typical of semi-arid rivers (e.g. Geeraert et al. 2015 for the nearby Tana River).

REF: iii. Justifying the sampling location point – in the context of a large and heterogeneous catchment;

REPLY: We have added a short statement justifying the location of the sampling site.

REF: iv. Reducing the number of studies cited – which seems excessive, given that the stated aim of the paper is ‘to present a 2-year biogeochemical record’.

REPLY: We fully agree; a similar suggestion was made by Ref#1, and we have cut

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down the number of references for many statements considerably.

References used in this reply:

Geeraert N, Omengo FO, Tamooch F, Paron P, Bouillon S, & Govers G (2015) Sediment yield of the lower Tana River, Kenya is insensitive to dam construction: sediment mobilization processes in a semi-arid tropical river system. *Earth Surface Processes and Landforms*, 40: 1827-1838

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