

Earth Surf. Dynam. Discuss., referee comment RC1  
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## **Comment on esurf-2021-39**

Anonymous Referee #1

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Referee comment on "Sand mining far outpaces natural supply in a large alluvial river" by Christopher R. Hackney et al., Earth Surf. Dynam. Discuss.,  
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The paper discusses the extremely pertinent topic of over-harvesting of rivers through sand mining. The region of focus chosen by the research team is particularly important as it is one of the highest impact global regions with respect to sand mining. Given the relatively limited academic literature around quantification of sand mining from different river ecosystems across the world, this paper makes an extremely important contribution to both literature and data on sand mining. I was very excited to read this paper and the figures that emerge from it. This paper provides new, and higher numbers which are highly likely to much closer to the reality of sand extraction in the LMK than previous estimates. I also hope to see further work from the authors as this is important, urgent and necessary data.

However, I am not an expert in GIS mapping and the other technical aspects of this research paper, and hence cannot comment on the details of the scientific assessment process. I hope other relevant reviewers can address technical issues and preform the quantitative check.

The abstract needs some grammatical improvements.

P1, L10: ..in part due to (followed by only one reason)... seems incomplete //either more "reasons" could be added here or there could be a minor edit to this statement. Next line: grammatically incorrect sentence: Can it be replaced with...?: Current estimates, based on 2013 figures, indicate that basin wide sand extraction in the Mekong River stood at least 50 Mt.

"Year on year" could be changed to: on a yearly basis? Or just "yearly"?

"We use.....respectively" is a very long statement and can easily be broken down into two or even three to enhance clarity for the reader.

P1, L29: Although it is correct that massive growth has been observed in the last three decades (around 1990s with neoliberal reforms being pushed through post Washington Consensus, trends show the increase since 1970s already). It might be interesting to include this paper... See Miatto et. al., 2016 paper quantifying global non-metallic mineral consumption.

P1, L30: Although correct, it might be better to specify: Estimates indicate that currently/today, at minimum, between 32-50 billion tons of aggregates...

P2, L32: ...; with impacts manifesting as... statement could end with ..., among others. Given the many more serious ecological and environmental impacts of the over-extraction of sand. You could see/quote Bisht, 2021 paper on global sand extractivism for this.

P2, L35: is reaches correct? Or is it "regions"?

P2, L39: ...pervasive and diffused..

P2, L56: "changed"

P2, L54-56. The statement is too long and seems a little unclear to me (The last part is referring to the recent bans in extraction and export of sand to Singapore?). Can this be split at "... (Hackney, 2020). However, tighter contractions on locations and rates of extraction, ....., are currently lacking...

P2, L62: could "sand transport" here be replaced with another phrase? Maybe, sediment transport. I was a bit confused about whether this meant the amount of sand being transported out of the LMK, until I read the details of the methodology below.