

## ***Interactive comment on “Dams on Mekong tributaries as significant contributors of hydrological alterations to the Tonle Sap Floodplain in Cambodia” by M. E. Arias et al.***

**Anonymous Referee #2**

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Thank you for allowing me to review this paper. The manuscript is of good quality and the topic is timely and would nicely fit in the scope of HESS. It gives the clear picture of the significant impact of dams in Mekong tributaries on the hydrological implications in the Tonle Sap Floodplain. The paper discusses the key points in the hydrological alterations that would be observed under different future scenarios development. The results of this research are useful for policy makers and also the future researchers to understand the issues in the Mekong region. I support that any upstream development activities in the Mekong will have significant impact in the downstream areas, for an instance on fisheries, agriculture etc. Thus, this research will add more intensive

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knowledge to it. However, I have some comments on this paper which are as follows:

1. Page 2178, line 8: “The main objective of this study focused on the impact assessment of hydropower development in tributaries of lower Mekong that may alter the hydrology of Tonle Sap Lake.” It is little unclear for me. Since the study has considered the impact of definite future scenarios as well, it will be good to modify in a way that will account all scenarios used in this study.

2. Page 2187, line 23-26: Water level fall rate for the BL (median of 3.2 cm d<sup>-1</sup>, range 3.0–3.6 cm d<sup>-1</sup>) was also significantly different from DF (median of 2.8 cm d<sup>-1</sup>, range 2.7–3.4 cm d<sup>-1</sup>) and 3S (median of 2.9 cm d<sup>-1</sup>, range 2.7–3.4 cm d<sup>-1</sup>; Fig. 4b). The citation of figure given for this statement should be Fig 4c instead of Fig 4b. Please check and modify it.

3. Page 2189, line 2: The citation Fig. 4c is incorrect in the statement “In contrast, maximum annual water level from BL (median of 8.58 m, range of 7.42–9.67 m) was not found to be significantly different from either development scenarios (Fig. 4c).” Please check it. Please address the comments 2 and 3 as possible.

4. “As Ty et al. (2012) pointed out for one of the 3S rivers (Srepok), these other factors could also cause alterations, particularly as a decrease in water availability during the dry season. This trend is opposite to the effects of hydropower in the 3S reported by Piman et al. (2013a), . . .” Is there any other similar/dissimilar discussion or interpretation for other two rivers of 3S basin, namely Sesan and Sekong Rivers. It will be interesting to see the impact of other factors on those two rivers as well.

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