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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Minimum forest cover for sustainable water flow regulation in a watershed under rapid expansion of oil palm and rubber plantations" *by* Suria Tarigan et al.

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Minimum forest cover for sustainable water flow regulation in a watershed under rapid expansion of oil palm and rubber plantations -The manuscript presents important results in determining a minimum forest cover within a watershed for sustainable water flow regulation. The research findings are useful for regional planning in order to prevent further expansion of plantation such as oil palm. Rapid expansion of palm oil or other mono-species plantation has reduced percentage of forest cover area and changed environmental condition, such as declining biodiversity and unbalance water flow. As the consequent of unbalance water flow leads to flooding in rainy season

and drought in dry season. -Although the manuscript explains important findings, however, it needs some improvement before publishing it in the international Journal. It will be useful if the accuracy of the model presented in the manuscript. It can be conducted by calculating the average deviation of the predicted and measured/observed variables using absolute values. Another method by graphing a scatter plot between the predicted and the observed variables, then graph a one-one line to show whether the predicted values above or under observed values (see example below).

-The other essential aspect is the continuation of lowflow in the dry period. In this manuscript the authors only explained the relation between % forest cover and BFI (baseflow/total flow). It is important to present lowflow, because there is an controversial issue regarding expansion of mono species plantation which is considered high water consumption and therefore it will be drought in a watershed when planted by mono species such oil palm. -Improvement of paragraph should be conducted, for example the second paragraph is too long. -Improvement of figures will present the manuscript better.

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