Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2017-116-SC3, 2017

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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Received and published: 1 July 2017

The study presented in the paper analyzes minimum forest cover in a watershed in order to maintain sustainable water flow regulation under a rapid expansion of plantation developments. This is an important paper as such a study is still lacking in Indonesia where the expansion of oil palm plantations has occurred rapidly in the past few years converting most of previously forest lands and reducing the total area of forest cover. This condition will potentially decrease the watershed's health and its function to regulate water flow if the land cover or land use type is not properly regulated.

This study will expectedly fill a gap in our understanding on how forests have con-

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Discussion paper

tributed to the water flow regulation along with some other factors such as rainfall, soil type, land management practices, and other influencing factors in the watershed. My suggestion is that to test the SWAT hydrological model that has been employed in this study in other areas with varying watershed characteristics and conditions to evaluate the indicators of water flow regulation function with various land covers or land-use types.

The method and result of this study will be useful input for stakeholders involved in spatial planning to define the minimum proportion of forest cover area in the watershed to maintain sustainable water flow regulation and what maximum area could be allocated for other land use types.

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