

Understory Limits Surface Runoff and Soil Loss in Teak Tree Plantations of Northern Lao PDR

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Supplementary Materials

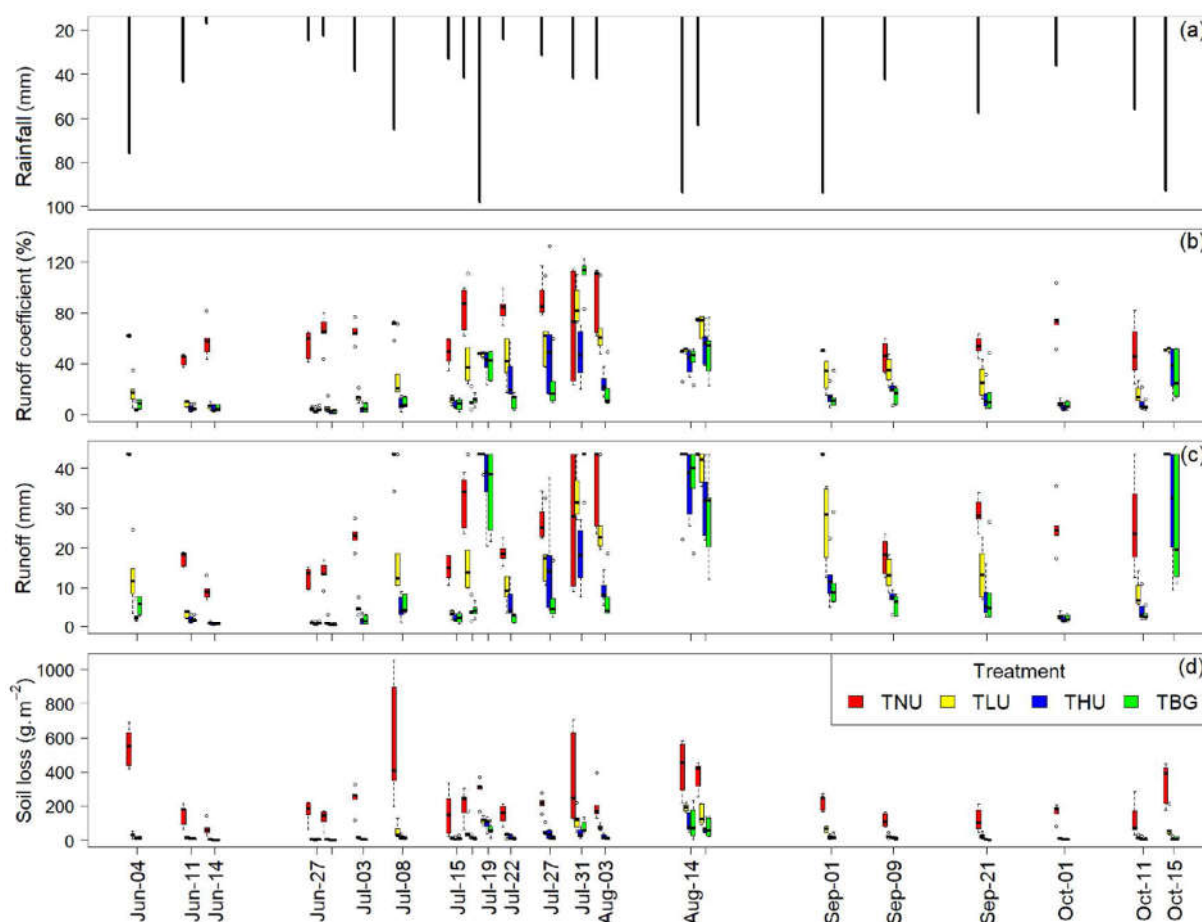


Figure S1. (a) Cumulated rainfall (mm). (b) boxplots of runoff coefficient (%). (c) boxplot of surface runoff (mm). (d) boxplot of soil loss ($\text{g} \cdot \text{m}^{-2}$) in each treatment measured from 4 June to 15 October 2017, in Ban Kokngew, Luang Prabang Province, Lao People's Democratic Republic. TNU: teak with no understory; TLU: teak with low density of understory; THU: teak with high density of understory; TBG: teak with broom grass. Each rainfall bar represents the accumulated rainfall over the period previous to the sampling. Each boxplot contains the extreme of the lower whisker (dashed line), the lower hinge (thin line), the median (bold line), the upper hinge (thin line), and the extreme of the upper whisker (dashed line). The whiskers extend to the most extreme data point, which is no more than 1.5-times the interquartile range from the box.

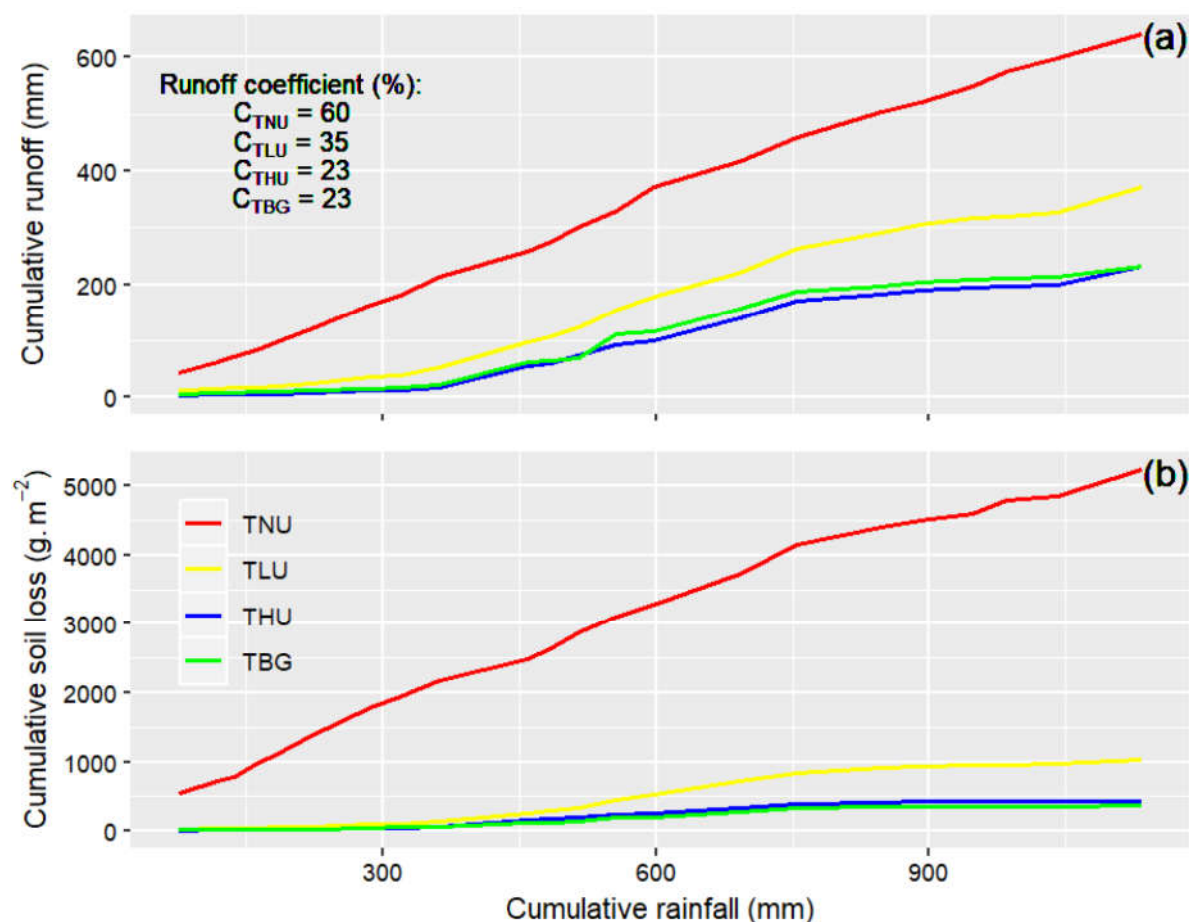


Figure S2. (a) Cumulative surface runoff (mm) versus cumulative rainfall and runoff coefficient (%), total surface runoff divided by total rainfall), and (b) cumulative soil loss ($\text{g} \cdot \text{m}^{-2}$) versus cumulative rainfall (mm), measured from 4 June to 15 October 2017, in Ban Kokngew, Luang Prabang Province, Lao People's Democratic Republic. TNU: teak with no understory; TLU: teak with low density of understory; THU: teak with high density of understory; TBG: teak with broom grass.

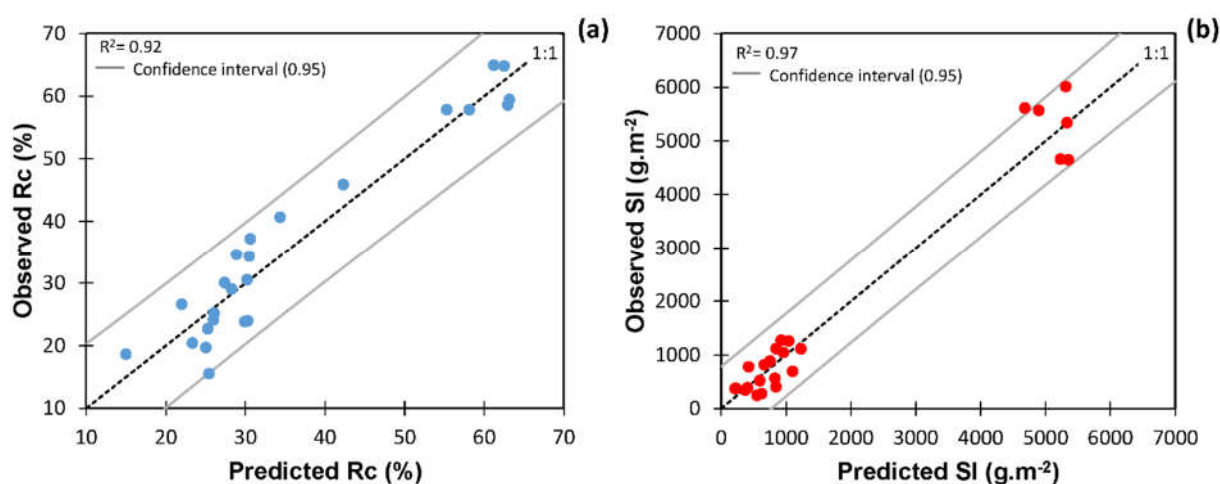


Figure S3. Observed and modelled seasonal runoff coefficient (Rc; in %) and seasonal soil loss (SI; in $\text{g} \cdot \text{m}^{-2}$) from partial least squares (PLS) regression method. Observed Rc and SI were measured from 4 June to 15 October 2017, in Ban Kokngew, Luang Prabang Province, Lao People's Democratic Republic.

Table S1. Coefficients of each variables in the runoff coefficient (%) and soil loss ($\text{g}\cdot\text{m}^{-2}$) partial least squares (PLS) models. SD: standard deviation; Fa: free aggregates; Fg: free gravel; Tc: total crust; Cha: charcoals; Res: residues; Wor: worm casts; Alg: algae; Mos: mosses; Ped: pedestals; Und: understory.

Variable	Runoff coefficient (%)				Soil loss ($\text{g}\cdot\text{m}^{-2}$)			
	Coefficient	SD	Lower limit	Upper limit	Coefficient	SD	Lower limit	Upper limit
Constant	43.53	3	37	50	2916.84	166	2573	3261
Fa	-0.10	0	0	0	-18.46	3	-25	-12
Fg	0.31	0	0	1	53.96	16	22	86
Tc	0.07	0	0	0	10.35	1	8	13
Cha	54.79	42	-32	142	7692.58	396 5	-531	15916
Res	-0.09	0	0	0	-12.40	1	-15	-10
Wor	-0.74	0	-1	0	-26.93	16	-60	7
Alg	41.56	21	-1	84	3191.76	736	1666	4718
Mos	3.41	5	-7	14	-84.62	83	-256	87
Ped	0.13	0	0	0	16.11	3	10	22
Und	-0.13	0	0	0	-14.34	1	-17	-12

Constants and coefficients of each variable of the proposed model of runoff coefficient and soil loss using PLS model.