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Assessing the large-scale impacts of environmental change using a coupled hydrology and soil erosion model

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Table S1. Input parameters for the model. Parameter determination indicates if the parameter can be obtained from literature (L), is measurable (M) or should be obtained from calibration (C). The bold characters indicate how the parameter values were obtained in the model application.

description	symbol	unit	equation	landuse-specific	parameter determination	reference
hydrological model						
depletion fraction	p_{tabular}	-	4	×	**L**	Allen et al. (1998, Table 22)
crop coefficient open-water evaporation	$kc_{\text{open-water}}$	-	5		**L** / C	Allen et al. (1998)
calibration parameter infiltration rate	λ	-	6		**C**	
fraction of daily rainfall	α	-	8		**M** / C	
maximum LAI	LAI_{max}	-	9	×	**L**	Sellers et al. (1996)
soil erosion model						
plant height	PH	m	13	×	**L** / M / C	
intensity of erosive precipitation	I	mm h^{-1}	14		**L** / C	Morgan and Duzant (2008)
canopy cover[1]	CC	-	16	×	M / C	
detachability by raindrop impact	K	g J^{-1}	18		**L** / M / C	Quansah (1982)
detachability by runoff	DR	g mm^{-1}	19		**L** / M / C	Quansah (1982)
ground cover	GC	-	18, 19	×	**M / C**	
water depth	d	m	21, 23, 26		**L** / C	Morgan and Duzant (2008)
sediment density	ρ_s	kg m^{-3}	22		**L** / M	Morgan and Duzant (2008)
flow density	ρ	kg m^{-3}	22		**L** / M	Morgan and Duzant (2008)
fluid veiscosity	η	$\text{kg m}^{-1}\,\text{s}^{-1}$	22		**L** / M	Morgan and Duzant (2008)
diameter of soil particles	δ	m	22		**L** / M	Morgan and Duzant (2008)
Manning's roughness bare soil	n_{soil}	$\text{s m}^{-1/3}$	24		**L** / C	Morgan and Duzant (2008)
Manning's roughness vegetation	$n_{\text{vegetation}}$	$\text{s m}^{-1/3}$	24	×	**L** / C	Chow (1959)
surface roughness for tilled soil	RFR	cm m^{-1}	25		**L** / C	Morgan and Duzant (2008)
stem diameter	D	m	26	×	**L** / M / **C**	
stem density	NV	stems m^{-2}	26	×	**M / C**	
sediment transport						
parameter transport capacity 1	β	-	28		L / **C**	Prosser and Rustomji (2000)
parameter transport capacity 2	γ	-	28		**L** / C	Prosser and Rustomji (2000)
water depth bare soil	d_{bare}	m	29		**L** / C	Morgan and Duzant (2008)
water depth transport capacity	d_{actual}	m	29		**L** / C	Morgan and Duzant (2008)
trapping efficiency constant	D	-	30		**L** / C	Brown (1943)

[1] can be obtained from NDVI

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