

Table A2. Spearman's Rank correlation coefficients and significance (2-tailed) for the soil samples variables measured in this study. Shaded boxes are significant correlations ($r \geq 0.5$ and $p \leq 0.01$).

		Elevation	Meteorology		Chemical composition									Mineralogy							Weathering indices					
			MAP	MAT	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	Fe oxide	Quartz	Amorphous silica	Feldspars	Kaolinite	Smectite	Mica	Chlorite	CIA	CIW	W	W _{min}
Elevation	Correlation Coefficient Sig.		.830 .000	-.822 .000	-.258 .009	.084 .408	.320 .001	-.227 .023	.645 .000	.200 .046	.200 .046	.387 .000	-.471 .000	.160 .112	.200 .046	-.093 .356	.069 .498	.215 .032	-.054 .597	-.201 .045	-.299 .003	.581 .000	.011 .915	-.186 .064	-.288 .004	-.577 .000
MAP	Correlation Coefficient Sig.			-.851 .000	-.176 .079	.008 .936	.367 .000	-.251 .012	.605 .000	.291 .003	.119 .238	.454 .000	-.519 .000	.277 .005	.260 .009	-.146 .148	.219 .029	.224 .025	-.055 .586	-.167 .096	-.265 .008	.554 .000	.086 .394	-.118 .242	-.233 .020	-.500 .000
MAT	Correlation Coefficient Sig.				.210 .036	-.077 .445	-.376 .000	.201 .045	-.656 .000	-.335 .001	-.164 .103	-.401 .000	.421 .000	-.236 .018	-.253 .011	.143 .156	-.145 .149	-.246 .014	.058 .564	.233 .020	.298 .003	-.537 .000	-.023 .820	.170 .092	.281 .005	.570 .000
Al2O3	Correlation Coefficient Sig.					-.350 .000	.404 .000	-.354 .000	-.466 .000	-.101 .320	-.823 .000	-.370 .000	-.127 .210	.140 .166	.408 .000	-.298 .003	.294 .003	-.229 .022	.387 .000	.300 .002	-.039 .702	-.482 .000	.761 .000	.664 .000	.591 .000	.440 .000
CaO	Correlation Coefficient Sig.						-.030 .764	-.014 .893	.302 .002	.152 .131	.419 .000	.432 .000	-.324 .001	.059 .563	-.004 .970	-.214 .033	.135 .181	.135 .181	-.337 .001	-.050 .618	.208 .037	.098 .330	-.551 .000	-.906 .000	-.873 .000	-.142 .158
Fe2O3	Correlation Coefficient Sig.							-.824 .000	.138 .172	.376 .000	-.349 .000	.092 .362	-.706 .000	.768 .000	.824 .000	-.371 .000	.380 .000	-.203 .043	.320 .001	.344 .000	-.318 .001	.007 .946	.651 .000	.142 .159	-.031 .763	.027 .791
K2O	Correlation Coefficient Sig.								.052 .610	-.242 .015	.336 .001	.086 .396	.708 .000	-.658 .000	-.744 .000	.362 .000	-.244 .014	.198 .048	-.445 .000	-.474 .000	.360 .000	.160 .111	-.681 .000	-.107 .290	.072 .477	-.173 .086
MgO	Correlation Coefficient Sig.									.184 .066	-.533 .000	.362 .000	-.196 .050	.017 .864	-.001 .994	.046 .650	-.077 .447	.269 .007	-.145 .150	-.264 .008	-.297 .003	.712 .000	-.362 .000	-.471 .000	-.531 .000	-.692 .000
MnO	Correlation Coefficient Sig.										.134 .183	.385 .000	-.407 .000	.417 .000	.273 .006	-.154 .127	.202 .043	-.109 .282	-.110 .275	.040 .690	.060 .556	.159 .115	.074 .465	-.180 .074	-.260 .009	-.119 .239
Na2O	Correlation Coefficient Sig.											.265 .008	.203 .043	-.159 .115	-.384 .000	.274 .006	-.198 .049	.218 .030	-.364 .000	-.241 .016	.040 .696	.396 .000	-.780 .000	-.722 .000	-.663 .000	-.330 .001
P2O5	Correlation Coefficient Sig.												-.411 .000	.285 .004	.023 .820	-.234 .019	.370 .000	.146 .147	-.447 .000	-.151 .135	.220 .028	.387 .000	-.333 .001	-.492 .000	-.488 .000	-.348 .000
SiO2	Correlation Coefficient Sig.													-.617 .000	-.693 .000	.493 .000	-.446 .000	.084 .408	-.082 .419	-.231 .021	.127 .207	-.118 .244	-.373 .000	.201 .045	.356 .000	.064 .525
TiO2	Correlation Coefficient Sig.														.618 .000	-.311 .002	.418 .000	-.134 .000	.043 .674	.435 .000	-.148 .142	-.020 .842	.401 .000	-.041 .682	-.190 .058	.069 .496
Feoxide	Correlation Coefficient															-.490	.420	-.223	.329	.396	-.231	-.159	.591	.144	.004	.164

[illegible]