TABLE S1: Results of principal component analysis with concept of component defining variable on climate parameters (n = 10 & 30).

Climate parameter [a]	Central Plain [b]		Southeast Coast [b]	
	PC1	PC2	PC1	PC2
PPT		-0.732	-0.801	
SR	-0.937*			0.980*
MeanT	0.791		0.931	
MaxT		0.896	0.922	
MinT	0.887		-0.959*	
WVP	0.906		-0.959*	
WS	0.906			
ETP		0.718	0.829	
WD		0.988*	0.714	
Eigenvalues	4.743	3.205	5.684	2.426
Variance (%)	52.697	35.608	63.152	26.952
Cumulative variance (%)	52.697	88.305	63.152	90.104

[a] PPT = annual precipitation; SR = daily solar radiation; MeanT = annual mean temperature; MaxT = annual maximum temperature; MinT = annual minimum temperature; WVP = annual water vapor pressure; WS = annual wind speed; ETP = evapotranspiration; WD = annual water deficit.

[b] PC = principal component; * = component defining variable.

TABLE S2: Results of principal component analysis with concept of component defining variable on soil properties of topsoil (n = 10).

Soil property [a]	Topsoil of Central Plain [b]				Topsoil of Southeast Coast [b]					
	PC1	PC2	PC3	PC4	PC1	PC2	PC3	PC4	PC5	PC6
Sand		0.816							-0.787	
Silt		0.951						0.924*		
Clay		-0.966*							0.879*	
AWC		0.926						0.792		
$pH_{1:1}$-H_2O	0.959				-0.758					
$pH_{1:1}$-H_2O_2	0.896									
OC			0.838		0.914		0.784			
TN			0.826							0.810
Avail-P	0.926									
Avail-K	0.943					0.869				
Extr-SO_4^{2-}	-0.893				0.965*					
EA	-0.884									
EC										
Exch-K	0.925					0.882*				
Exch-Ca	0.964*									0.944*
Exch-Mg	0.848					0.756				
Exch-Na						0.834				
CEC			0.927*						0.739	
BSP	0.963									
Extr-Al	-0.927				0.843					
Acid-BC				0.795*	0.829					
Base-BC			0.813				0.948*			
Eigenvalues	10.319	4.620	3.335	1.619	5.300	4.730	3.164	2.938	2.822	2.034
Variance (%)	46.906	21.000	15.161	7.361	24.091	21.498	14.384	13.357	12.826	9.246
Cumulative variance (%)	46.906	67.906	83.067	90.428	24.091	45.589	59.973	73.330	86.156	95.402

[a] OC = organic carbon; TN = total nitrogen; Avail = available; Extr = extractable; EA = extractable acidity; EC = electrical conductivity; Exch = exchangeable; CEC = cation exchange capacity; BSP = base saturation percentage; BC = buffering capacity; AWC = available water capacity.

[b] Topsoil = Ap; PC = principal component; * = component defining variable.

TABLE S3: Results of principal component analysis with concept of component defining variable on soil properties of subsoil-1 (n = 10).

Soil property [a]	Subsoil-1 of Central Plain [b]					Subsoil-1 of Southeast Coast [b]				
	PC1	PC2	PC3	PC4	PC5	PC1	PC2	PC3	PC4	PC5
Sand		-0.708								
Silt									0.964*	
Clay		0.804								-0.834*
AWC									0.947	
$pH_{1:1}$-H_2O	0.853					-0.914				
$pH_{1:1}$-H_2O_2				-0.919*		-0.815				
OC		0.714				0.868				
TN		0.949				0.702				
Avail-P		0.709						0.937*		
Avail-K	0.833						0.866			
Extr-SO_4^{2-}					0.959	0.837				
EA		0.851				0.875				
EC					0.983*					
Exch-K	0.906						0.875			
Exch-Ca	0.962*						0.805			
Exch-Mg	0.821						0.878			
Exch-Na			-0.841*				0.922*			
CEC		0.968*				0.828				
BSP	0.934									
Extr-Al	-0.942					0.933				
Acid-BC	0.862					0.974*				
Base-BC								0.908		
Eigenvalues	8.209	5.448	2.352	2.252	2.201	7.758	5.184	3.012	2.984	2.093
Variance (%)	37.312	24.763	10.689	10.235	10.003	35.262	23.563	13.691	13.562	9.514
Cumulative variance (%)	37.312	62.075	72.764	83.000	93.002	35.262	58.825	72.516	86.078	95.592

[a] OC = organic carbon; TN = total nitrogen; Avail = available; Extr = extractable; EA = extractable acidity; EC = electrical conductivity; Exch = exchangeable; CEC = cation exchange capacity; BSP = base saturation percentage; BC = buffering capacity; AWC = available water capacity.

[b] Subsoil-1 = Ap – 60 cm; PC = principal component; * = component defining variable.

TABLE S4: Results of principal component analysis with concept of component defining variable on soil properties of subsoil-2 (n = 10).

Soil property [a]	Subsoil-2 of Central Plain [b]					Subsoil-2 of Southeast Coast [b]				
	PC1	PC2	PC3	PC4	PC5	PC1	PC2	PC3	PC4	PC5
Sand					-0.817*		-0.914			
Silt	0.906						0.804			
Clay	-0.922						0.759			
AWC	0.872						0.934*			
$pH_{1:1}$-H_2O	0.981*							0.777		
$pH_{1:1}$-H_2O_2		-0.855						0.887		
OC					0.729					
TN		0.870*							0.791	
Avail-P		0.764							0.872*	
Avail-K						0.814				
Extr-SO_4^{2-}				0.872*						
EA										0.883*
EC				0.812		0.830				
Exch-K	0.890					0.891				
Exch-Ca	0.757					0.863				
Exch-Mg			0.970*			0.925*				
Exch-Na			0.918			0.919				
CEC	-0.731						0.721			
BSP					0.731					
Extr-Al	-0.815								0.788	
Acid-BC		0.848						-0.941*		
Base-BC		0.742								
Eigenvalues	7.386	4.751	2.805	2.712	2.432	7.037	4.189	3.246	3.161	2.748
Variance (%)	33.573	21.598	12.752	12.329	11.054	31.987	19.041	14.753	14.366	12.493
Cumulative variance (%)	33.573	55.170	67.922	80.251	91.305	31.987	51.028	65.781	80.147	92.640

[a] OC = organic carbon; TN = total nitrogen; Avail = available; Extr = extractable; EA = extractable acidity; EC = electrical conductivity; Exch = exchangeable; CEC = cation exchange capacity; BSP = base saturation percentage; BC = buffering capacity; AWC = available water capacity.

[b] Subsoil-2 = 60 – 100 cm; PC = principal component; * = component defining variable.

TABLE S5: Results of principal component analysis with concept of component defining variable on soil properties of rootzone (n = 30).

Soil property [a]	Rootzone of Central Plain [b]						Rootzone of Southeast Coast [b]					
	PC1	PC2	PC3	PC4	PC5	PC6	PC1	PC2	PC3	PC4	PC5	PC6
Sand					-0.858*					-0.822		
Silt			0.984*						0.905*			
Clay			-0.901							0.926*		
AWC			0.958						0.831			
$pH_{1:1}$-H_2O	0.915											
$pH_{1:1}$-H_2O_2	0.847						-0.706					
OC		0.857					0.717					
TN		0.973*										0.849*
Avail-P	0.894										0.877*	
Avail-K	0.928							0.853				
Extr-SO_4^{2-}				0.828			0.829					
EA	-0.749						0.797					
EC				0.917*								
Exch-K	0.880							0.894				
Exch-Ca	0.955*											0.703
Exch-Mg	0.736							0.912				
Exch-Na								0.929*				
CEC		0.837										
BSP	0.949											
Extr Al	-0.871						0.771					
Acid-BC						0.950*	0.952*					
Base-BC											0.827	
Eigenvalues	8.116	3.341	3.324	2.070	1.724	1.386	5.730	5.182	2.568	2.518	2.066	1.839
Variance (%)	36.893	15.185	15.110	9.408	7.837	6.301	26.047	23.556	11.675	11.446	9.390	8.361
Cumulative variance (%)	36.893	52.077	67.187	76.596	84.433	90.734	26.047	49.602	61.277	72.723	82.113	90.474

[a] OC = organic carbon; TN = total nitrogen; Avail = available; Extr = extractable; EA= extractable acidity; EC = electrical conductivity; Exch = exchangeable; CEC = cation exchange capacity; BSP = base saturation percentage; BC = buffering capacity; AWC = available water capacity.

[b] Rootzone = top 100 cm; PC = principal component; * = component defining variable.