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Appendix S1

Description of modern lifestyle of Saamaka Maroons
Today, Saamaka Maroons depend on the forest for fishing, hunting for bushmeat, and gathering (Price, 2011). Palms such as Astrocaryum sciophilum (bugru maka), Euterpe oleracea (Podosiri), Geonoma baculifera, Oenocarpus bacaba (Kumbu) and Attalea maripa (Maripa) are used for food, oil, and construction (van Andel and Ruysschaert, 2014). Trees such as Ceiba pentandra (Kankan), Eperua falcata (Walaba), Inga spp., Spondias mombin (Mope), Loncocarpus spp. and Dicorynia guianensis (Basralocus) are used for timber, food and other purposes (van Andel and Ruysschaert, 2014). Small scale forest clearing occurs for subsistence purposes. Land tillage is done manually with small handheld hoes and minimal disturbance past half a meter below the surface. On small plantations of ±0.5 ha (maximum 6 ha), which have been deforested by fire and logging, shifting cultivation of Manihot esculenta (Cassava) is practiced (Budelman and Ketelaars, 1974; Fleskens and Jorritsma, 2010; van Andel et al., 2016). Also, Ipomoea batatas (sweet potato), Saccharum officinarum (sugarcane), Alocasia/Colocasia (Tayer), Zea mays L. (corn), Oryza sativa, and Oryza globerrima (rice and black/African rice) and Arachis hypogea (peanuts) are planted (Price, 1991). The small plantations are surrounded by forests and secondary vegetation quickly takes over when plots are often left fallow (Hoffman, 2009).

The shifting cultivation usually has a specific order of crops. First, men cut and burn the forested vegetation to create space for the plantation, afterwards women plant crops. First Saccharum officinarum (sugarcane), Zea mays L. (corn), Musaceae (banana/bakove) and Ipomoea batatas (sweet potato) are planted. On the 12th or 15th of March, Oryza (rice) is planted, and afterwards Alocasia/Colocasia (Tayer) is planted. Cecropiaceae and Heliconia species grow in or near plantations as weeds.

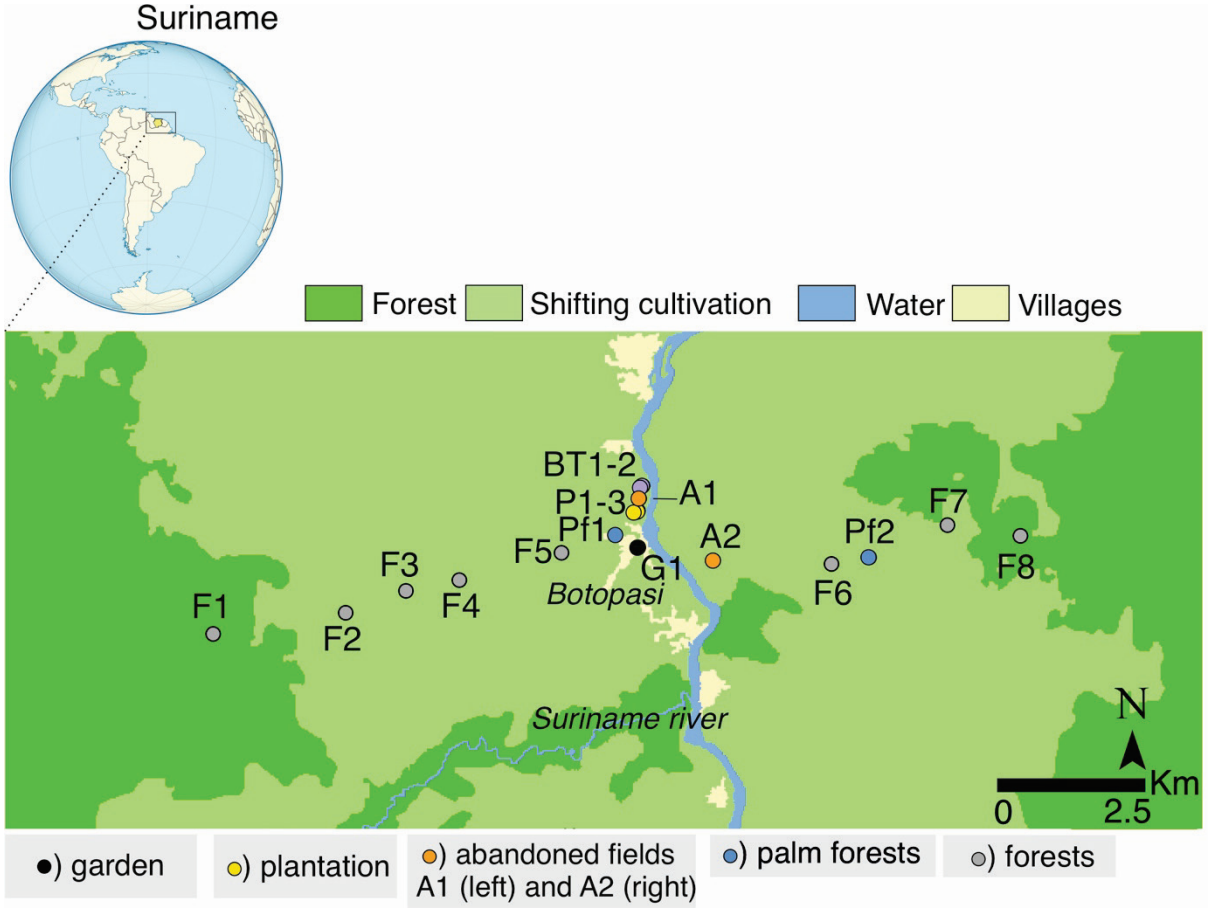

Figure S1 Map showing the sampling sites analysed in this study (near Botopasi, Suriname). Sites are plotted on a map showing the distribution of shifting ("National Land Monitoring System of Suriname," 2016).

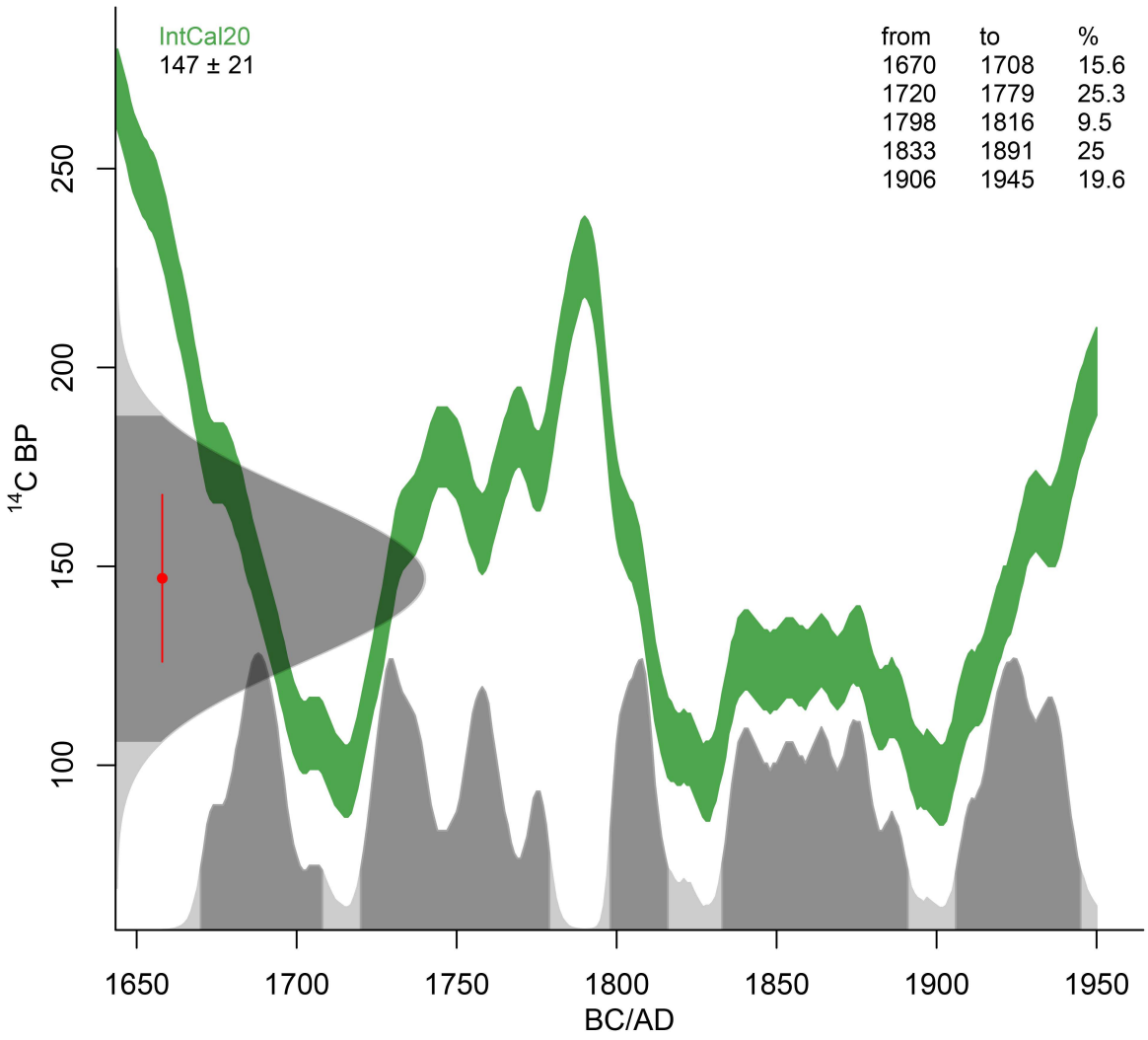

Figure S2: Calibrated radiocarbon date of a charcoal fragment collected from an in-situ assemblage of soft paste earthenware potsherds inside one of the excavated units (Unit 3F 10-20cm depth) at the Beng Tapu archaeological site.

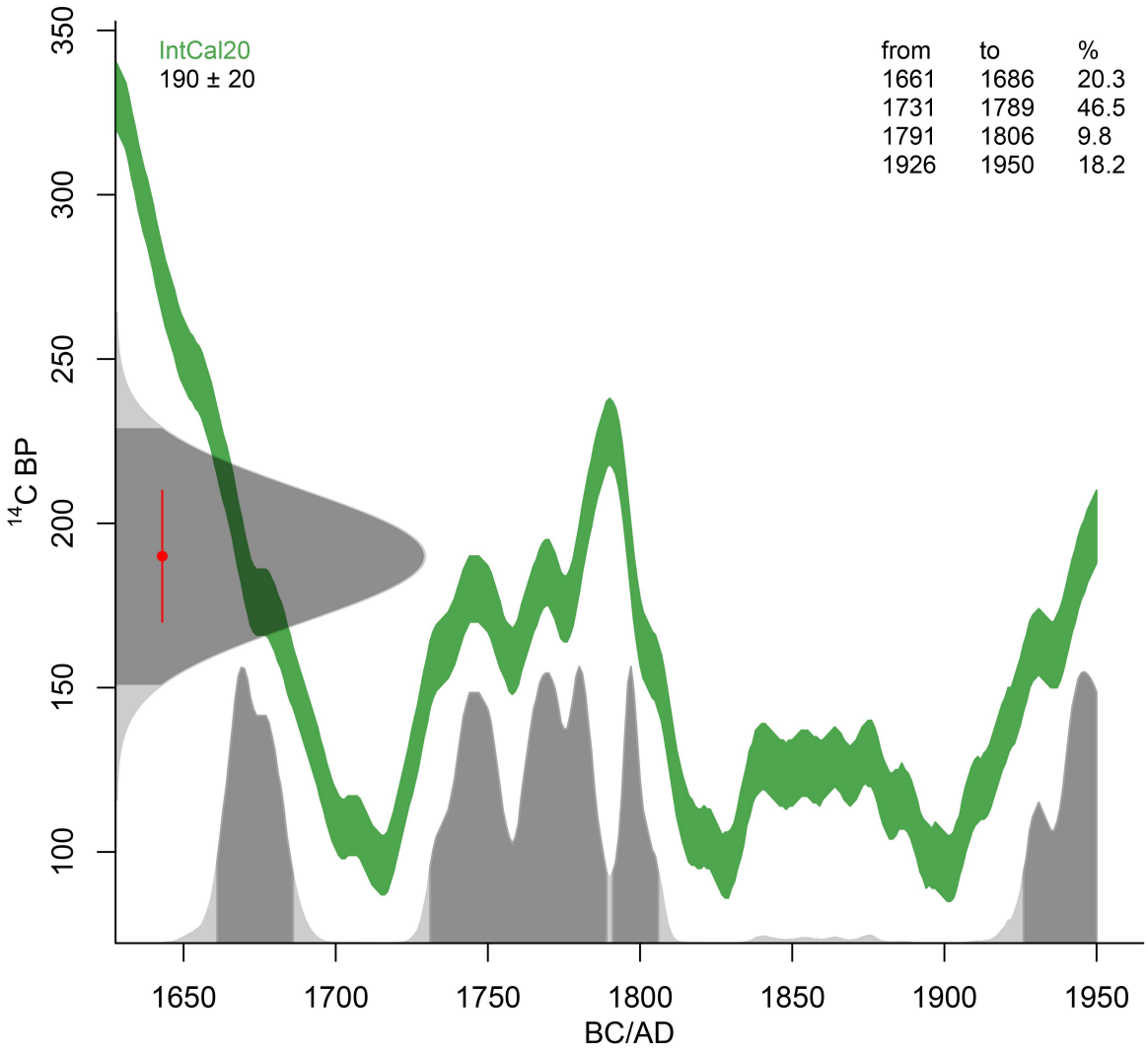

Figure S3: Calibrated radiocarbon date of soil core BT1 at depth 0-10cm.

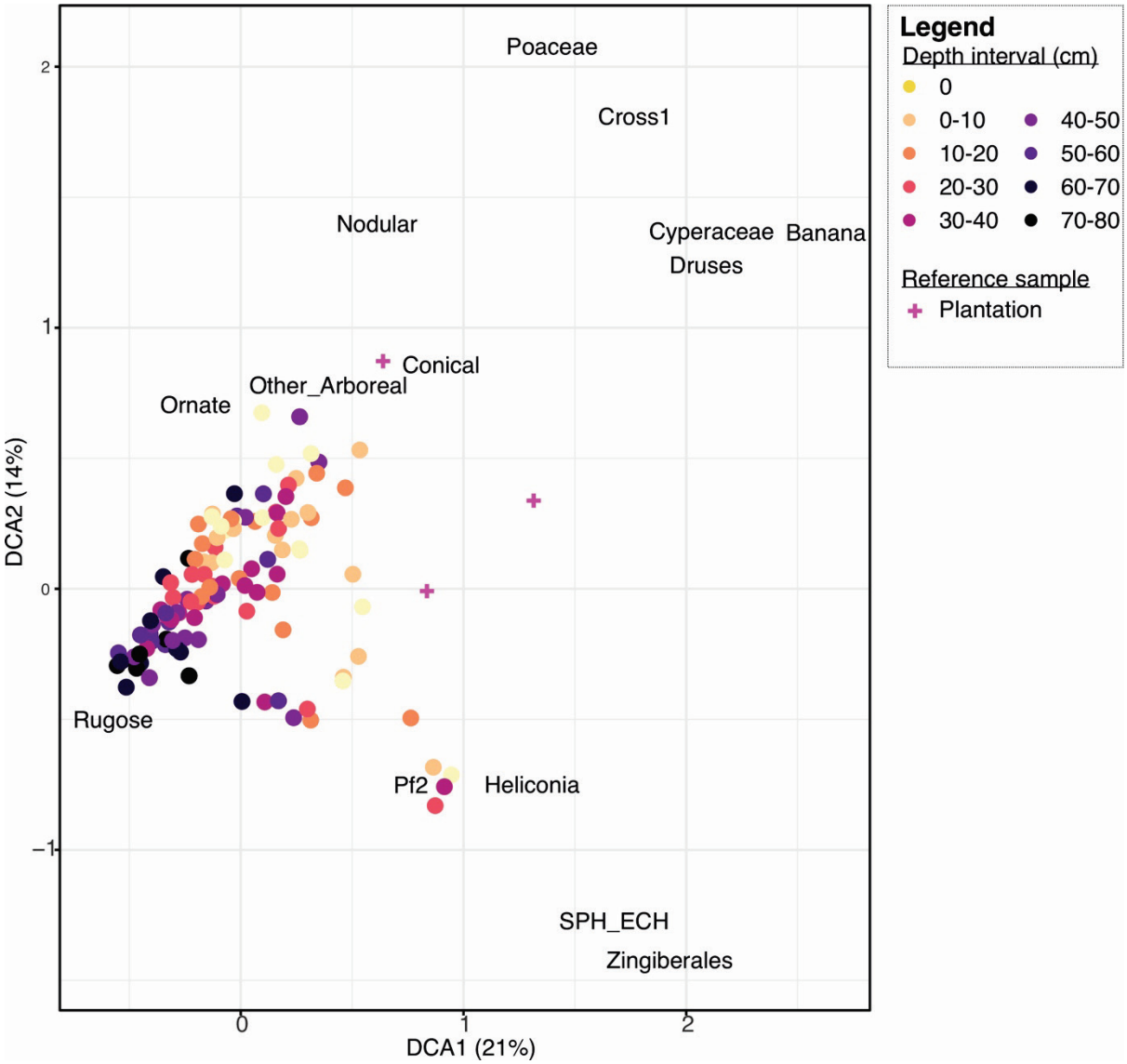

Figure S4: Detrended Correspondence Analysis (DCA) of phytolith percentage data from all the sampled sites, coloured by depth. Phytolith names correspond to Appendix S1: Table S2.

Table S1: Sampling sites, their current land use and coordinates

Site name	Land use?	Latitude	Longitude
G1 (Garden)	Managed	4.220633	-55.44375
P1-2 (Plantation)	Managed	4.22675	-55.444233
P3 (Plantation)	Managed	4.227033	-55.44375
A1 (Abandoned field)	Formerly managed	4.229183	-55.44355
A2 (Abandoned field)	Formerly managed	4.218317	-55.430683
BT1 (Archeological site)	Formerly managed	4.2313	-55.443283
BT2 (Archeological site)	Formerly managed	4.231417	-55.443
Pf1 (Forested)	Unmanaged	4.222817	-55.447733
F5 (Forested)	Unmanaged	4.219733	-55.457133
F4 (Forested)	Unmanaged	4.21495	-55.474967
F3 (Forested)	Unmanaged	4.213083	-55.484317
F2 (Forested)	Unmanaged	4.2093	-55.494817
F6 (Forested)	Unmanaged	4.21765	-55.410033
Pf2 (Forested)	Unmanaged	4.218783	-55.403433
F7 (Forested)	Unmanaged	4.224467	-55.389717
F8 (Forested)	Unmanaged	4.2255	-55.376983
F1 (Forested)	Unmanaged	4.205633	-55.517967

Table S2: Phytolith morphotypes used in the data analyses, their corresponding plant taxa and literature source

Phytolith group	**Phytolith Morphotype**	**Taxonomic group**	**Literature**
Rugose	rugose SPH_ECH >10µm and <10µm and ornate-rugose SPH_ECH <10µm and >10µm	Chrysobalanaceae, Boraginaceae, Burseraceae, Malvaceae, Proteaceae, Lecythidaceae, Dichapetalaceae, Dilleniaceae, Moraceae, Ulmaceae	(Piperno, 2006; Piperno and McMichael, 2020)
Ornate	ornate SPH_ECHs <10µm and >10µm, granulate SPH_ECHs <10µm and >10µm	Acanthaceae, Boraginaceae, Burseraceae, Lecythidaceae, Dichapetalaceae, Dilleniaceae, Moraceae, Ulmaceae, Apocynaceae, Violaceae, Vochysiaceae	(Piperno, 2006; Piperno and McMichael, 2020)
Nodular	nodular SPH_ECHs <10µm and >10µm	Malvaceae (formerly Bombaceae), Zingiberales	(Collura and Neumann, 2017; Piperno, 2006; Watling et al., 2020)
Other woody	ellipsoidal shapes with various textures, SPH_ECH shapes with echinate-verrucate, few spines and other textures		(Collura and Neumann, 2017; Neumann et al., 2019; Piperno, 2006)
SPH_ECH	SPH_ECH echinate <15µm and >15µm, ellipsoidal echinate <12µm and >12µm	*Euterpe, Oenocarpus, Attalea, Hyospathe elegans* and *Cocos nucifera*	(Morcote-Ríos et al., 2016; Witteveen et al., 2022)
SPH_SYM	SPH_ECH symmetrical <15µm and >15µm	*Euterpe, Oenocarpus, Cocos nucifera, Mauritia flexuosa, Hyospathe elegans*	(Witteveen et al., 2022)
Conical	Conical few circular >12µm, conical few oblong >12µm, conical few <12µm, conical few <9µm, conical echinate,	*Astrocaryum* and *Bactris*	(Huisman et al., 2018; Witteveen et al., 2022)

	conical echinate 7-9 projections, conical tabular		
	SPH_ECH echinate >15 µm (SPH_ECH>15µm)	*Attalea*	(Witteveen et al., 2022)
	SPH_ECH tuberculate >15 µm (SPH_TUB>15µm)	*Attalea* and *Oenocarpus*	(Witteveen et al., 2022)
Druses	Druses	Cannaceae, Costaceae, Marantaceae, Strelitziaceae	(Chen and Smith, 2013)
Knobby	Knobby	Heliconiaceae, Marantaceae	(Chen and Smith, 2013)
	T1 trough	*Heliconia*	(Chen and Smith, 2013; Yost, 2011)
	T2 trough	Musaceae	(Chen and Smith, 2013)
Zingiberales	Hat-shaped <13 µm, unknown morphotypes similar to Chen and Smith, 2013	Zingiberaceae	(Chen and Smith, 2013)
Cyperaceae	Polygonal shape, pappillate shape	Cyperaceae	(Piperno, 2006)
Poaceae	Cross 1, Cross, Bilobate, Rondel, Other grass, P*anicoideae, Bambusoideae, Chloridoideae, Pharoideae, Pooideae, Oryzoideae* (see rows below)	Poaceae	(Morcote-Ríos et al., 2015; Piperno, 2006)
Panicoideae	Symmetrical polylobate, asymmetrical polylobate, cross 2, cross 5/6, cross 7	*Panicoideae*	(Morcote-Ríos et al., 2015; Piperno, 2006)
Bambusoideae	Tall saddle, collapsed saddle, other bambusoideae, cross3,	*Bambusoideae*	(Morcote-Ríos et al., 2015; Piperno, 2006)
Chloridoideae	Squat saddles	*Chloridoideae*	(Morcote-Ríos et al., 2015; Piperno, 2006)
Pharoideae	*Pharoideae* squared shapes	*Pharoideae*	(Morcote-Ríos et al., 2015; Piperno, 2006)

Pooideae	Wavy trapezoids	*Pooideae*	(Piperno, 2006)
Oryzoideae	Scooped crosses and bilobates	Oryzoideae	(Piperno, 2006)
	Cross 1>21 μm, ruffle-top rondels	*Zea mais*	(Iriarte, 2003; Piperno, 2006)
	Cross 1 <21 μm	*Panicoideae*	(Morcote-Ríos et al., 2015; Piperno, 2006)
Asteraceae	Perforated plates	Asteraceae	(Piperno, 2006)
Commelinaceae	Seed phytoliths	Commelinaceae	(Eichhorn et al., 2010)

Table S3: Radiocarbon dating results (uncalibrated and calibrated age ranges and 1 sigma errors)

Location	**Depth (cm)**	**Material**	**14C Age (BP)**	**1 sigma error**	**pMC**	**1 sigma error (pMC)**	**Calibrated Age Range (95% probability, AD/BC)**
F3	20	charcoal	1756	15	80.36	0.15	244-347
A1	0	charcoal	66	0	116.51	0.21	1989.5 - 1990.5
C	0	charcoal	66	0	105.29	0.22	1956.5-2010.5
BT1	10	charcoal	190	20	97.66	0.24	1661-1950
BT1	20	charcoal	854	21	91.77	0.24	1161-1256
BT1	30	charcoal	690	21	89.92	0.23	1277-1381
BT2	40	charcoal	2029	26	77.68	0.25	96 BC – 62 AD
A2	0	charcoal	66	0	115.62	0.24	1958.5 - 1990.5
F6	0	charcoal	66	0	116.95	0.21	1958.5 - 1990.5
F7	20	charcoal	1230	27	85.80	0.29	686– 882
F7	40	charcoal	1154	17	77.68	0.18	776-974
F8	20	charcoal	1625	28	81.69	0.28	406 – 538
Unit 3F, inside ceramics	10-20 cm level	Charcoal	147	21	98.19	0.26	1670 – 1945

Table S4: The number of small, medium, large and extra large CROSS 1 phytoliths for each sample that contained CROSS 1 phytoliths.

Distance to Beng Tapu (km)	Site_name	Depth_cm	Small CROSS 1 (<11.4 μm)	Medium CROSS 1 (11.4 – 16 μm)	Large CROSS 1 (16-21 μm)	Extra large CROSS 1 (Maize) >21 μm
0	BT2	0	6	7	1	1
0	BT2	10	5			
0	BT2	40	6	7		
0	BT2	50	3	1		1
0	BT2	60	3			
0	BT2	70	2	1	1	
0	BT2	30	2			
0	BT2	20	22	12	2	
0	BT2	80	2			
0	BT1	10	8	2		
0	BT1	0	0	3		
0	BT1	20	9	2		
0	BT1	40	4	4		
0	BT1	50	1			
0.25	A1	10	14	9		
0.25	A1	0	39	10		
0.25	A1	40	2			
0.25	A1	50	1	1		
0.25	A1	20		1		
0.25	A1	30	1			
0.5	C	0	12	17	4	2
0.5	C	10	7	2		
0.5	C	20		1		
0.5	C	30	3	5		
0.5	C	40	1			
0.5	C	50	2	1		
0.5	C	60		1		
1	Pf1	40	2	3		1
1	Pf1	20	10	3	3	
1	Pf1	60	1			
1	Pf1	80	1			
1	Pf1	30	13	4	1	
1	A2	0	3			
1	A2	10	3	2		
1	A2	20	1			
1	A2	30		1		

1	A2	40	1	1		
1	A2	50	1	1	1	
1	A2	60	12	10	1	
1	A2	70	2			
1	A2	80		1		
2	F5	0	1			
2	F5	40	1			
2	F5	30	3	5	1	
2	F6	0	5	3	1	
2	F6	10	18	5	2	
2	F6	20	5	1		
2	F6	40	1			
2	F6	50	1			
2	F4	20			1	
2	F4	70	1			
2	F4	60		1		
5	Pf2	0	1			
5	Pf2	10	1			
6	F3	10	1			
6	F3	20	6	5		
6	F7	20	5	10		
6	F7	40	1			
6	F7	50		1	1	
6	F7	60	1			
8	F8	10	1		1	
8	F8	20		1		
8	F8	30	2			
8	F8	40	6			
8	F8	60	2	1		
10	F1	40	1			

Table S5: Results from figure 3a, showing for each soil core the magnitude of change (based on the maximum – minimum abundance) and the trend of change (based on the surface - basal abundance) for morphotypes Rugose, Ornate, SPH_ECH, Conical and Poaceae. Rows are ordered by 'Magnitude of change'.

Soil core	Phytolith_morphotype	Magnitude of change	Trend of change
BT1	Rugose	61.83	-58.80
F7	Rugose	58.28	-57.64
F8	Rugose	53.84	-52.63
A1	Rugose	53.38	-43.16
BT2	Rugose	46.35	-44.58
F4	Rugose	45.50	-44.99
F5	Rugose	41.98	-35.17
F1	Rugose	41.73	-41.73
A2	Rugose	40.68	-35.61
Pf1	Rugose	39.80	-39.07
F3	Rugose	35.30	-28.65
F4	Ornate	27.35	27.35
BT2	SPH_ECH	27.30	18.96
F6	Rugose	26.21	-18.17
C	Rugose	25.07	-22.39
C	Poaceae	24.72	21.29
Pf1	SPH_ECH	22.95	21.92
F8	Ornate	22.86	15.77
F2	Rugose	22.21	-18.42
BT2	Ornate	21.01	0.35
F7	Ornate	20.07	10.27
F1	Ornate	19.95	19.95
F6	SPH_ECH	19.09	-1.01
F3	Ornate	17.58	17.24
F7	Conical	15.26	10.27
F5	Conical	14.63	8.36
A1	Conical	14.50	14.50
A2	Poaceae	14.30	7.84
F5	Ornate	14.20	14.20
A2	Ornate	14.01	2.51
Pf2	SPH_ECH	13.50	-3.64
BT1	Ornate	13.21	10.29
F6	Ornate	12.87	1.06
BT1	SPH_ECH	12.74	11.47
A1	Ornate	12.61	2.53
F3	Conical	12.57	12.57
A2	SPH_ECH	12.25	8.00
A1	SPH_ECH	11.85	11.85
F6	Conical	11.53	8.25

F8	SPH_ECH	11.46	0.59
A2	Conical	11.39	4.05
F7	SPH_ECH	10.55	7.48
F8	Conical	10.46	5.43
F8	Poaceae	9.64	0.08
C	Conical	9.44	0.68
F2	Ornate	8.84	7.72
F7	Poaceae	8.50	1.69
C	SPH_ECH	8.14	-5.14
F2	Conical	7.94	4.81
Pf1	Ornate	7.34	5.66
Pf2	Ornate	7.08	1.91
Pf2	Rugose	7.05	-4.76
BT2	Conical	6.55	2.98
F1	Conical	6.44	3.50
F5	SPH_ECH	6.24	0.53
Pf1	Conical	6.12	6.12
C	Ornate	5.45	-1.34
F1	SPH_ECH	5.07	2.32
F4	Conical	4.40	3.98
F3	SPH_ECH	3.79	1.98
F2	SPH_ECH	3.78	2.28
BT1	Poaceae	3.59	2.96
BT2	Poaceae	3.59	2.83
Pf2	Conical	3.43	-1.09
F6	Poaceae	3.34	-2.52
F4	SPH_ECH	3.23	2.46
A1	Poaceae	3.21	3.21
Pf1	Poaceae	1.83	0.31
BT1	Conical	1.70	1.46
F3	Poaceae	1.55	-1.55
F4	Poaceae	1.30	1.10
F5	Poaceae	1.27	1.05
Pf2	Poaceae	1.26	-0.20
F1	Poaceae	0.83	0.25
F2	Poaceae	0.65	0.43

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