

Table S1: Rating of soil physical and chemical indicators

Indicators		Indicator rating				
<i>Macronutrient elements</i>	Unit	100	80	50	20	10
N	%	>0.32	0.32–0.17	0.09–0.17	0.09–0.045	<0.045
P	mg kg <sup>-1</sup>	>80	25–80	8.0–25	2.5–8.0	<2.5
K	cmol(+) kg <sup>-1</sup>	0.28–0.74	0.74–2.56	0.13–0.28	>2.56	<0.13
Ca	cmol(+) kg <sup>-1</sup>	17.5–50	5.75–17.5	1.19–5.75	>50	<1.19
S	cmol(+) kg <sup>-1</sup>	0.0–0.20	0.21–0.30	0.31–0.70	0.71–2.0	>2.0
Mg	cmol(+) kg <sup>-1</sup>	1.33–4.0	4.0–12.5	0.42–1.33	>12.5	<0.42
<i>Micronutrient elements</i>						
Mn	mg kg <sup>-1</sup>	14–50	4–14	50–170	>170	<4
Zn	mg kg <sup>-1</sup>	0.7–2.4	2.4–8.0	0.2–0.7	>8.0	<0.2
Fe	mg kg <sup>-1</sup>	2.0–4.5	1.0–2.0	1.0–0.2	>4.5	<0.2
Cu	mg kg <sup>-1</sup>	>0.2	–	–	–	<0.2
<i>Soil physical and chemical characteristics</i>						
EC	%/dS m <sup>-1</sup>	0–0.15/0–2	0.15–0.30/2–4	0.30–0.50/4–6	0.50–0.65/6–8	>0.65/>8
pH	-	6.5–7.5	7.5–8.5	5.5–6.5	4.5–5.5	<4.5->8.5
SOC	%	>3	2–3	1–2	0.5–1	0–0.5

Table S2. Pairwise comparison matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1	9.00	3.00	4.00	5.00	5.00	5.00	6.00	7.00	7.00	6.00	6.00	5.00	9.00	6.00	2.00	3.00
2	0.11	1	8.00	9.00	8.00	7.00	6.00	5.00	4.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
3	0.33	0.12	1	5.00	4.00	3.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	8.00	7.00	6.00
4	0.25	0.11	0.20	1	3.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	8.00	7.00	5.00	4.00
5	0.20	0.12	0.25	0.33	1	3.00	4.00	5.00	6.00	7.00	8.00	9.00	8.00	7.00	6.00	5.00	4.00

6	0.20	0.14	0.33	0.50	0.33	1	3.00	4.00	5.00	6.00	7.00	8.00	9.00	8.00	7.00	5.00	4.00
7	0.20	0.17	0.50	0.33	0.25	0.33	1	4.00	7.00	7.00	5.00	7.00	5.00	7.00	6.00	6.00	7.00
8	0.17	0.20	0.33	0.25	0.20	0.25	0.25	1	8.00	7.00	6.00	5.00	4.00	3.00	2.00	3.00	4.00
9	0.14	0.25	0.25	0.20	0.17	0.20	0.14	0.12	1	9.00	9.00	8.00	7.00	6.00	5.00	4.00	2.00
10	0.14	0.50	0.20	0.17	0.14	0.17	0.14	0.14	0.11	1	5.00	5.00	7.00	8.00	9.00	8.00	7.00
11	0.17	0.33	0.17	0.14	0.12	0.14	0.20	0.17	0.11	0.20	1	4.00	3.00	2.00	3.00	4.00	5.00
12	0.17	0.25	0.14	0.12	0.11	0.12	0.14	0.20	0.12	0.20	0.25	1	8.00	9.00	7.00	5.00	3.00
13	0.20	0.20	0.12	0.11	0.12	0.11	0.20	0.25	0.14	0.14	0.33	0.12	1	4.00	5.00	6.00	7.00
14	0.11	0.17	0.11	0.12	0.14	0.12	0.14	0.33	0.17	0.12	0.50	0.11	0.25	1	7.00	5.00	2.00
15	0.17	0.14	0.12	0.14	0.17	0.14	0.17	0.50	0.20	0.11	0.33	0.14	0.20	0.14	1	4.00	5.00
16	0.50	0.12	0.14	0.20	0.20	0.20	0.17	0.33	0.25	0.12	0.25	0.20	0.17	0.20	0.25	1	9.00
17	0.33	0.11	0.17	0.25	0.25	0.25	0.14	0.25	0.50	0.14	0.20	0.33	0.14	0.50	0.20	0.11	1
18	0.25	0.12	0.20	0.33	0.33	0.50	0.11	0.20	0.33	0.17	0.17	0.50	0.11	0.50	0.17	0.12	0.17
19	0.17	0.14	0.25	0.50	0.50	0.33	0.11	0.14	0.25	0.20	0.14	0.33	0.11	0.33	0.14	0.14	0.20

Number of comparisons = 171

**Consistency Ratio CR** = 35.4%

Principal eigen value = 29.377

Eigenvector solution: 11 iterations, delta = 3.5E-8

Table S3. Resulting weights for the criteria based on pairwise comparisons

Cat		Priority	Rank	(+)	(-)
1	pH	16.8%	1	19.6%	19.6%
2	EC	15.5%	2	15.6%	15.6%
3	BD	9.5%	3	6.2%	6.2%
4	PD	8.1%	5	5.4%	5.4%
5	Porosity	8.2%	4	6.5%	6.5%
6	WHC	7.0%	6	5.3%	5.3%
7	OC	6.7%	7	5.6%	5.6%
8	N	5.1%	8	6.2%	6.2%
9	P	4.8%	9	5.9%	5.9%
10	K	4.0%	10	3.3%	3.3%
11	Ca	2.2%	12	1.8%	1.8%
12	Mg	2.5%	11	3.1%	3.1%
13	S	2.2%	13	2.1%	2.1%
14	Fe	1.4%	16	1.7%	1.7%
15	Mn	1.4%	15	1.4%	1.4%
16	Cu	1.6%	14	2.0%	2.0%
17	Zn	1.1%	17	1.1%	1.1%