Figure S1. Linear relationships between leaf litter Si contents among different collection times. (a) May 1998 as a function of April 1997, (b) August 1998 as a function of May 1998 and (c) April 1997 as a function of August 1998. See Figure 2 for Plot ID in the legend. $^{\dagger}P$ <0.1, $^{*}P$ <0.05.
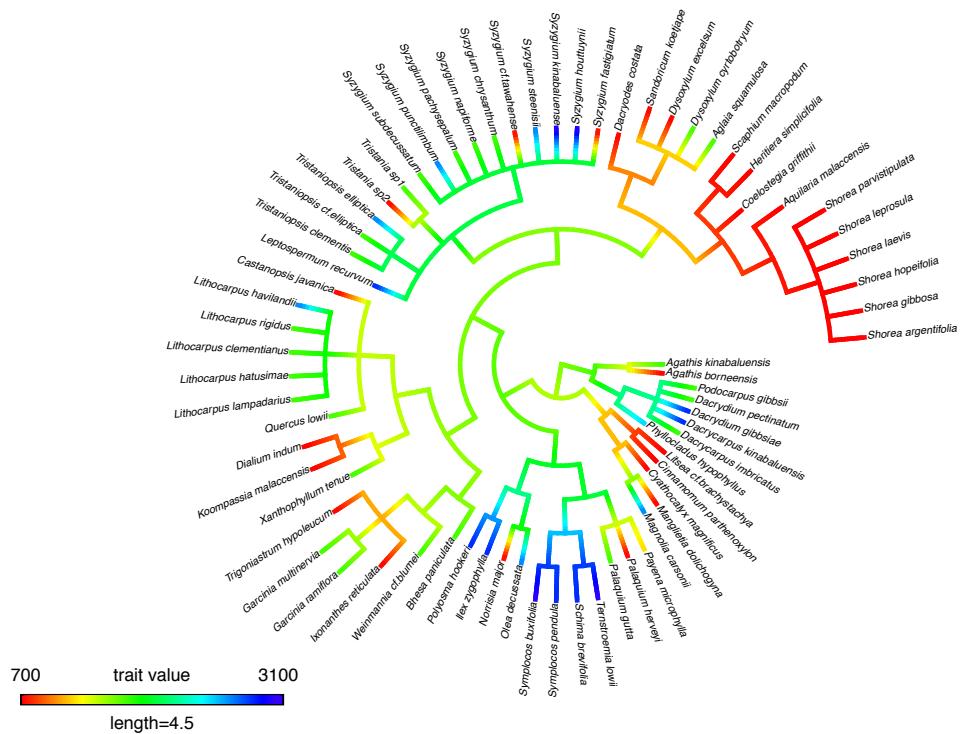
Figure S2. Interpolated elevation values based on the phylogenetic tree for the 71 species focused in this study. Different colors represent different elevation values. The Blomberg's *K* statistic showed significant and weak phylogenetic signal ($K = 0.37$, $P < 0.05$). This map was generated with the phytools package (version 0.5.64; Revell 2012) in R.
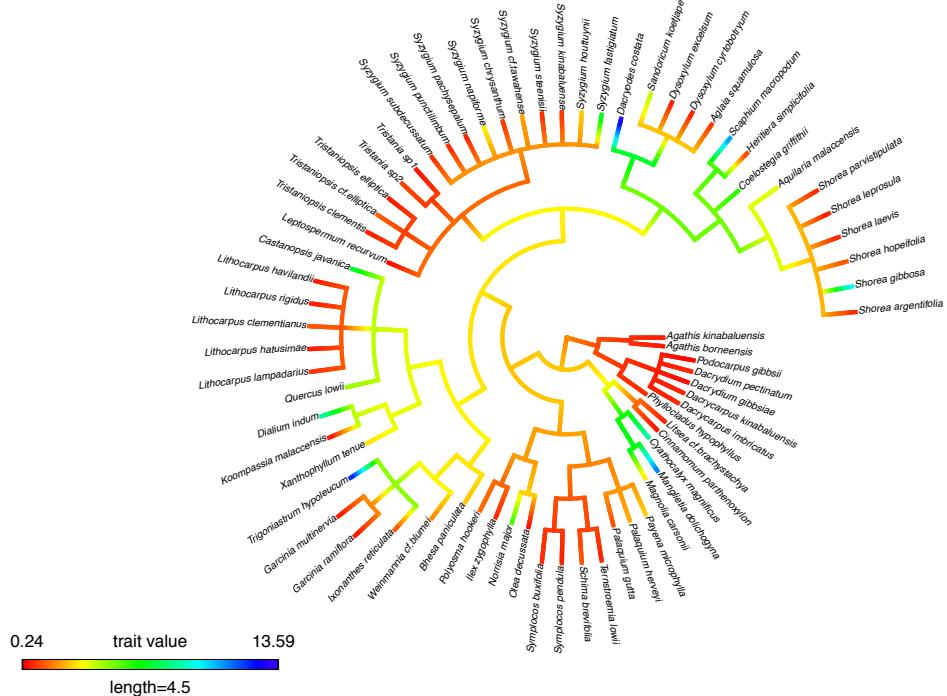
Figure S3. Interpolated leaf Si concentrations per unit leaf mass based on the phylogenetic tree for the 71 species focused in this study. Different colors represent different leaf Si concentrations. The Blomberg's *K* statistic showed non-significant and weak phylogenetic signal (*K* = 0.27). This map was generated with the phytools package (version 0.5.64; Revell 2012) in R.

Table S1. The list of 71 species included in the study, and their relative basal area of stems ≥ 10 cm dbh (RBA, %) in eight plots. The ID number

is given in Fig. 2. The plot ID indicates elevation and bedrock type: 07S, 17S, 27S and 31S indicate 700, 1,700, 2,700 and 3,100 m elevation

on sedimentary rock, respectively, and 07U, 17U, 27U and 31U indicate 700, 1,700, 2,700 and 3,100 m elevation on ultrabasic rock,

respectivcely. Species occuring at multiple plots are highlighted in yellow.

ID	Family	Species	07S 1.0 ha	07U 1.0 ha	17S 1.0 ha	17U 0.2 ha	27S 0.25 ha	27U 0.2 ha	31S 0.2 ha	31U 0.06 ha
1	Annonaceae	*Cyathocalyx magnificus*	-	1.5	-	-	-	-	-	-
2	Aquifoliaceae	*Ilex zygophylla*	-	-	-	-	8.2	-	5.9	-
3	Araucariaceae	*Agathis borneensis*	-	3.5	-	-	-	-	-	-
4	Araucariaceae	*Agathis kinabaluensis*	-	-	-	19.2	-	-	-	-
5	Bombacaceae	*Coelostegia griffithii*	-	2.9	-	-	-	-	-	-
6	Burseraceae	*Dacryodes costata*	-	4.2	-	-	-	-	-	-
7	Celastraceae	*Bhesa paniculata*	-	-	1.3	-	-	-	-	-
8	Cunoniaceae	*Weinmannia* cf. *blumei*	-	-	-	3.9	-	-	-	-
9	Dipterocarpaceae	*Shorea argentifolia*	6.4	-	-	-	-	-	-	-
10	Dipterocarpaceae	*Shorea gibbosa*	-	1.9	-	-	-	-	-	-
11	Dipterocarpaceae	*Shorea hopeifolia*	4.4	-	-	-	-	-	-	-
12	Dipterocarpaceae	*Shorea laevis*	-	30.5	-	-	-	-	-	-

13	Dipterocarpaceae	*Shorea leprosula*	7.3	-	-	-	-	-	-	-
14	Dipterocarpaceae	*Shorea parvistipulata*	4.5	3.1	-	-	-	-	-	-
15	Escalloniaceae	*Polyosma hookeri*	-	-	-	-	-	2.8	5.1	-
16	Fagaceae	*Castanopsis javanica*	4.3	-	-	-	-	-	-	-
17	Fagaceae	*Lithocarpus clementianus*	-	-	4.6	-	-	-	-	-
18	Fagaceae	*Lithocarpus hatusimae*	-	-	2.5	-	-	-	-	-
19	Fagaceae	*Lithocarpus havilandii*	-	-	-	-	8.2	-	-	-
20	Fagaceae	*Lithocarpus lampadarius*	-	-	1.7	-	-	-	-	-
21	Fagaceae	*Lithocarpus rigidus*	-	-	-	2.3	-	-	-	-
22	Fagaceae	*Quercus lowii*	-	-	-	3.3	-	-	-	-
23	Guttiferae	*Garcinia multinervia*	-	-	1.5	-	-	-	-	-
24	Guttiferae	*Garcinia ramiflora*	-	-	2.7	-	-	-	-	-
25	Ixonanthaceae	*Ixonanthes reticulata*	8.0	-	-	-	-	-	-	-
26	Lauraceae	*Cinnamomum parthenoxylon*	2.4	-	-	-	-	-	-	-
27	Lauraceae	*Litsea* cf. *brachystachya*	2.8	-	-	-	-	-	-	-
28	Leguminosae	*Dialium indum*	1.8	-	-	-	-	-	-	-
29	Leguminosae	*Koompassia malaccensis*	-	2.2	-	-	-	-	-	-
30	Loganiaceae	*Norrisia major*	3.5	-	-	-	-	-	-	-
31	Magnoliaceae	*Magnolia carsonii*	-	-	-	-	18.3	-	-	-
32	Magnoliaceae	*Manglietia dolichogyna*	2.2	-	-	-	-	-	-	-
33	Meliaceae	*Aglaia squamulosa*	-	-	2.9	-	-	-	-	-
34	Meliaceae	*Dysoxylum cyrtobotryum*	-	-	1.4	-	-	-	-	-

#	Family	Species								
35	Meliaceae	*Dysoxylum excelsum*	-	2.0	-	-	-	-	-	-
36	Meliaceae	*Sandoricum koetjape*	3.1	-	-	-	-	-	-	-
37	Myrtaceae	*Leptospermum recurvum*	-	-	-	-	-	21.6	6.9	89.4
38	Myrtaceae	*Syzygium* cf. *tawahense*	-	1.9	-	-	-	-	-	-
39	Myrtaceae	*Syzygium chrysanthum*	-	-	3.1	-	-	-	-	-
40	Myrtaceae	*Syzygium fastigiatum*	2.0	-	-	-	-	-	-	-
41	Myrtaceae	*Syzygium houttuynii*	-	-	-	-	-	-	10.4	-
42	Myrtaceae	*Syzygium kinabaluense*	-	-	-	-	-	-	6.8	-
43	Myrtaceae	*Syzygium napiforme*	-	-	3.4	-	-	-	-	-
44	Myrtaceae	*Syzygium pachysepalum*	-	-	5.0	-	-	-	-	-
45	Myrtaceae	*Syzygium punctilimbum*	-	-	-	-	40.7	-	-	-
46	Myrtaceae	*Syzygium steenisii*	-	-	-	-	-	4.6	-	-
47	Myrtaceae	*Syzygium subdecussatum*	-	-	-	2.1	-	-	-	-
48	Myrtaceae	*Tristania* sp.1	-	-	4.3	-	-	-	-	-
49	Myrtaceae	*Tristania* sp.2	3.0	-	-	-	-	-	-	-
50	Myrtaceae	*Tristaniopsis* cf. *elliptica*	-	-	-	31.4	-	-	-	-
51	Myrtaceae	*Tristaniopsis clementis*	-	-	6.9	-	-	-	-	-
52	Myrtaceae	*Tristaniopsis elliptica*	-	-	-	-	-	6.8	-	-
53	Oleaceae	*Olea decussata*	-	-	-	-	9.1	-	-	-
54	Phyllocladaceae	*Phyllocladus hypophyllus*	-	-	1.8	-	7.9	-	-	1.3
55	Podocarpaceae	*Dacrycarpus imbricatus*	-	-	5.7	-	-	-	-	-
56	Podocarpaceae	*Dacrycarpus kinabaluensis*	-	-	-	-	-	19.1	36.3	7.5

#	Family	Species								
57	Podocarpaceae	*Dacrydium gibbsiae*	-	-	-	-	-	32.5	-	1.7
58	Podocarpaceae	*Dacrydium pectinatum*	-	-	5.9	4.0	-	-	-	-
59	Podocarpaceae	*Podocarpus gibbsii*	-	-	-	6.8	-	-	-	-
60	Polygalaceae	*Xanthophyllum tenue*	-	-	-	6.9	-	-	-	-
61	Sapotaceae	*Palaquium gutta*	-	-	1.6	-	-	-	-	-
62	Sapotaceae	*Palaquium herveyi*	-	2.3	-	-	-	-	-	-
63	Sapotaceae	*Payena microphylla*	6.7	-	6.2	-	-	-	-	-
64	Sterculiaceae	*Heritiera simplicifolia*	-	2.6	-	-	-	-	-	-
65	Sterculiaceae	*Scaphium macropodum*	-	2.5	-	-	-	-	-	-
66	Symplocaceae	*Symplocos buxifolia*	-	-	-	-	-	-	3.9	-
67	Symplocaceae	*Symplocos pendula*	-	-	-	-	-	1.3	2.5	-
68	Theaceae	*Schima brevifolia*	-	-	-	-	-	7.2	10.0	-
69	Theaceae	*Ternstroemia lowii*	-	-	-	-	-	-	4.2	-
70	Thymelaeaceae	*Aquilaria malaccensis*	-	3.4	-	-	-	-	-	-
71	Trigoniaceae	*Trigoniastrum hypoleucum*	-	1.3	-	-	-	-	-	-
		Total RBA	62.4	65.8	62.5	79.9	92.4	95.9	92	99.9

Table S2. Plot-and-species mean leaf Si concentration for the 71 tree species from 28 families. The ID number is used in Fig 2. Mean leaf Si

concentration was found by averaging at least three replicates per species except n = 1 for *Shorea parvistipulata* (No.14) on ultrabasic rock,

Tristania sp.2 (No.44) and *Heritiera simplicifolia* (No.64) (indicated by asterisk). Species occuring at multiple plots are highlighted in

yellow.

ID	Family	Species	07S 1.0 ha	07U 1.0 ha	17S 1.0 ha	17U 0.2 ha	27S 0.25 ha	27U 0.2 ha	31S 0.2 ha	31U 0.06 ha
1	Annonaceae	*Cyathocalyx magnificus*	-	8.61	-	-	-	-	-	-
2	Aquifoliaceae	*Ilex zygophylla*	-	-	-	-	0.61	-	0.98	-
3	Araucariaceae	*Agathis borneensis*	-	0.57	-	-	-	-	-	-
4	Araucariaceae	*Agathis kinabaluensis*	-	-	-	0.62	-	-	-	-
5	Bombacaceae	*Coelostegia griffithii*	-	6.13	-	-	-	-	-	-
6	Burseraceae	*Dacryodes costata*	-	13.59	-	-	-	-	-	-
7	Celastraceae	*Bhesa paniculata*	-	-	2.69	-	-	-	-	-
8	Cunoniaceae	*Weinmannia* cf. *blumei*	-	-	-	1.97	-	-	-	-
9	Dipterocarpaceae	*Shorea argentifolia*	0.70	-	-	-	-	-	-	-
10	Dipterocarpaceae	*Shorea gibbosa*	-	9.87	-	-	-	-	-	-
11	Dipterocarpaceae	*Shorea hopeifolia*	1.25	-	-	-	-	-	-	-
12	Dipterocarpaceae	*Shorea laevis*	-	0.64	-	-	-	-	-	-

#	Family	Species	C1	C2	C3	C4	C5	C6	C7	C8
13	Dipterocarpaceae	*Shorea leprosula*	0.51	-	-	-	-	-	-	-
14	Dipterocarpaceae	*Shorea parvistipulata*	0.46	0.85*	-	-	-	-	-	-
15	Escalloniaceae	*Polyosma hookeri*	-	-	-	-	-	1.31	1.78	-
16	Fagaceae	*Castanopsis javanica*	7.16	-	-	-	-	-	-	-
17	Fagaceae	*Lithocarpus clementianus*	-	-	1.29	-	-	-	-	-
18	Fagaceae	*Lithocarpus hatusimae*	-	-	0.51	-	-	-	-	-
19	Fagaceae	*Lithocarpus havilandii*	-	-	-	-	0.54	-	-	-
20	Fagaceae	*Lithocarpus lampadarius*	-	-	0.79	-	-	-	-	-
21	Fagaceae	*Lithocarpus rigidus*	-	-	-	0.55	-	-	-	-
22	Fagaceae	*Quercus lowii*	-	-	-	4.73	-	-	-	-
23	Guttiferae	*Garcinia multinervia*	-	-	0.57	-	-	-	-	-
24	Guttiferae	*Garcinia ramiflora*	-	-	0.50	-	-	-	-	-
25	Ixonanthaceae	*Ixonanthes reticulata*	1.25	-	-	-	-	-	-	-
26	Lauraceae	*Cinnamomum parthenoxylon*	0.50	-	-	-	-	-	-	-
27	Lauraceae	*Litsea* cf. *brachystachya*	0.67	-	-	-	-	-	-	-
28	Leguminosae	*Dialium indum*	8.47	-	-	-	-	-	-	-
29	Leguminosae	*Koompassia malaccensis*	-	0.42	-	-	-	-	-	-
30	Loganiaceae	*Norrisia major*	5.73	-	-	-	-	-	-	-
31	Magnoliaceae	*Magnolia carsonii*	-	-	-	-	3.07	-	-	-
32	Magnoliaceae	*Manglietia dolichogyna*	11.38	-	-	-	-	-	-	-
33	Meliaceae	*Aglaia squamulosa*	-	-	0.91	-	-	-	-	-
34	Meliaceae	*Dysoxylum cyrtobotryum*	-	-	0.59	-	-	-	-	-

#	Family	Species								
35	Meliaceae	*Dysoxylum excelsum*	-	0.59	-	-	-	-	-	-
36	Meliaceae	*Sandoricum koetjape*	4.23	-	-	-	-	-	-	-
37	Myrtaceae	*Leptospermum recurvum*	-	-	-	-	-	0.30	0.49	0.32
38	Myrtaceae	*Syzygium* cf. *tawahense*	-	2.27	-	-	-	-	-	-
39	Myrtaceae	*Syzygium chrysanthum*	-	-	0.90	-	-	-	-	-
40	Myrtaceae	*Syzygium fastigiatum*	7.15	-	-	-	-	-	-	-
41	Myrtaceae	*Syzygium houttuynii*	-	-	-	-	-	-	2.80	-
42	Myrtaceae	*Syzygium kinabaluense*	-	-	-	-	-	-	0.87	-
43	Myrtaceae	*Syzygium napiforme*	-	-	3.24	-	-	-	-	-
44	Myrtaceae	*Syzygium pachysepalum*	-	-	0.66	-	-	-	-	-
45	Myrtaceae	*Syzygium punctilimbum*	-	-	-	-	0.75	-	-	-
46	Myrtaceae	*Syzygium steenisii*	-	-	-	-	-	0.79	-	-
47	Myrtaceae	*Syzygium subdecussatum*	-	-	-	0.82	-	-	-	-
48	Myrtaceae	*Tristania* sp.1	-	-	0.43	-	-	-	-	-
49	Myrtaceae	*Tristania* sp.2	1.07*	-	-	-	-	-	-	-
50	Myrtaceae	*Tristaniopsis* cf. *elliptica*	-	-	-	1.44	-	-	-	-
51	Myrtaceae	*Tristaniopsis clementis*	-	-	0.65	-	-	-	-	-
52	Myrtaceae	*Tristaniopsis elliptica*	-	-	-	-	-	0.50	-	-
53	Oleaceae	*Olea decussata*	-	-	-	-	0.42	-	-	-
54	Phyllocladaceae	*Phyllocladus hypophyllus*	-	-	0.80	-	0.89	-	-	0.68
55	Podocarpaceae	*Dacrycarpus imbricatus*	-	-	0.74	-	-	-	-	-
56	Podocarpaceae	*Dacrycarpus kinabaluensis*	-	-	-	-	-	0.60	0.78	0.57

			C1	C2	C3	C4	C5	C6	C7	C8
57	Podocarpaceae	*Dacrydium gibbsiae*	-	-	-	-	-	0.27	-	0.47
58	Podocarpaceae	*Dacrydium pectinatum*	-	-	0.92	0.46	-	-	-	-
59	Podocarpaceae	*Podocarpus gibbsii*	-	-	-	0.24	-	-	-	-
60	Polygalaceae	*Xanthophyllum tenue*	-	-	-	3.06	-	-	-	-
61	Sapotaceae	*Palaquium gutta*	-	-	1.25	-	-	-	-	-
62	Sapotaceae	*Palaquium herveyi*	-	2.40	-	-	-	-	-	-
63	Sapotaceae	*Payena microphylla*	4.16	-	1.53	-	-	-	-	-
64	Sterculiaceae	*Heritiera simplicifolia*	-	0.98*	-	-	-	-	-	-
65	Sterculiaceae	*Scaphium macropodum*	-	11.08	-	-	-	-	-	-
66	Symplocaceae	*Symplocos buxifolia*	-	-	-	-	-	-	0.80	-
67	Symplocaceae	*Symplocos pendula*	-	-	-	-	-	0.51	0.72	-
68	Theaceae	*Schima brevifolia*	-	-	-	-	-	1.00	1.48	-
69	Theaceae	*Ternstroemia lowii*	-	-	-	-	-	-	0.67	-
70	Thymelaeaceae	*Aquilaria malaccensis*	-	3.74	-	-	-	-	-	-
71	Trigoniaceae	*Trigoniastrum hypoleucum*	-	12.65	-	-	-	-	-	-