

758 **Appendix S1. Mean values of the functional traits for the studied**  
759 **species**

Species	Nb	DBH <sub>max</sub> mm	Height <sub>max</sub> m	WdDens <sub>max</sub> g·cm <sup>-3</sup>	Bark mm	SLA cm <sup>2</sup> ·g <sup>-1</sup>	K μg·g <sup>-1</sup>	N cg·g <sup>-1</sup>	P μg·g <sup>-1</sup>	CN g·g <sup>-1</sup>	LTD g·cm <sup>-3</sup>	Chlo μg·mm <sup>-2</sup>	Tough N	δ <sup>13</sup> C ‰
<i>Apeiba glabra</i>	1	440	33	0.45	-2.6	12	0.0066	0.02	0.00086	24	3.6e-05	62	1.1	0.22
<i>Aspidosperma album</i>	2	600	43	0.67	3.6	7.3	0.0049	0.017	0.00046	28	4.1e-05	89	2.2	0.77
<i>Bocopa prouacensis</i>	4	380	37	0.84	-1.4	11	0.0026	0.025	0.00051	20	4.4e-05	63	2.4	0.35
<i>Carapa procera</i>	14	440	35	0.55	-0.5	10	0.0043	0.018	0.00064	27	4.3e-05	89	2.6	0.76
<i>Catostemma fragrans</i>	1	290	29	0.61	1.8	11	0.0017	0.023	0.00022	24	3.9e-05	68	2.5	0.91
<i>Cecropia obtusa</i>	1	300	33	0.41	-0.3	9.1	0.0086	0.028	0.0014	18	3.5e-05	66	1.8	1.8
<i>Chaetocarpus schomburgkianus</i>	4	540	33	0.77	-1.1	6	0.0018	0.013	0.00045	34	4.4e-05	100	2.7	-1.1
<i>Chimarrhis turbinata</i>	1	850	40	0.61	-4.7	13	0.012	0.028	0.0011	17	2.9e-05	50	1.4	0.89
<i>Chrysophyllum prieurii</i>	4	500	33	0.8	-0.44	7.8	0.0048	0.022	0.00062	23	5.6e-05	96	2.1	1.2
<i>Chrysophyllum sanguinolentum</i>	5	560	36	0.6	3	7.2	0.0033	0.015	0.00047	33	4.9e-05	71	2.6	0.95
<i>Couepia bracteosa</i>	1	430	28	0.8	0.86	8.9	0.0044	0.015	0.00048	34	4.7e-05	59	2.4	-0.46
<i>Dicorynia guianensis</i>	10	800	50	0.65	-1.2	12	0.0037	0.024	0.00044	21	3.7e-05	77	1.7	1.5
<i>Drypetes variabilis</i>	1	500	34	0.72	0.25	9.2	0.0047	0.02	0.00078	22	3.9e-05	92	2.2	1
<i>Eperua falcata</i>	25	680	34	0.64	0.86	13	0.0038	0.021	0.00077	24	5e-05	60	1.3	2
<i>Eschweilera coriacea</i>	13	570	37	0.68	-0.57	9.9	0.0084	0.021	0.0012	24	4.9e-05	77	1.9	-0.54
<i>Eschweilera sagotiana</i>	12	530	44	0.7	0.54	7.2	0.0028	0.019	0.00045	28	4.6e-05	71	3	-0.6
<i>Goupia glabra</i>	3	830	37	0.67	1.5	13	0.0028	0.021	0.00063	24	4.9e-05	72	1.4	0.1
<i>Gustavia hexapetala</i>	1	220	35	0.62	1.8	13	0.005	0.026	4e-04	18	3.7e-05	64	1.5	0.14
<i>Hebepetalum humirifolium</i>	1	460	24	0.74	-0.065	14	0.0092	0.023	0.00064	21	3.3e-05	78	1.1	0.32
<i>Hirtella bicornis</i>	1	400	24	0.74	-0.84	15	0.0035	0.018	5e-04	26	4.3e-05	58	1.4	1.8
<i>Inga alba</i>	1	750	30	0.51	-3.8	15	0.0044	0.035	0.0012	14	4.3e-05	80	1.4	0.69
<i>Iryanthera sagotiana</i>	3	390	36	0.54	0.012	12	0.0024	0.019	0.00053	27	3.9e-05	80	0.85	-1
<i>Laemellea aculeata</i>	1	190	18	0.54	1.6	12	0.0069	0.016	7e-04	33	3.2e-05	87	1.1	-1
<i>Laetia procera</i>	1	510	38	0.59	4.9	10	0.0035	0.025	0.001	21	4.4e-05	100	1.8	-0.26
<i>Lecythis corrugata</i>	1	410	34	0.59	-1.2	8.1	0.0041	0.019	0.00046	26	4.8e-05	64	2	-1.5
<i>Lecythis persistens</i>	4	280	38	0.69	0.36	8.7	0.0062	0.019	5e-04	27	4.2e-05	78	2.5	-0.59
<i>Lecythis poiteaui</i>	1	520	40	0.68	1.8	13	0.0046	0.028	0.00059	18	4.7e-05	54	1.3	0.47
<i>Lecythis zabucajo</i>	1	520	38	0.68	1.7	12	0.0072	0.023	0.00065	23	4.4e-05	56	1	1.2
<i>Licania alba</i>	4	440	31	0.77	-0.47	7.6	0.0043	0.014	0.00039	34	4.2e-05	60	2.7	-0.6
<i>Licania heteromorpha</i>	2	370	32	0.78	-1	8.7	0.0022	0.015	4e-04	34	4.8e-05	70	1.9	-1.6
<i>Licania membranacea</i>	9	500	42	0.8	0.049	8.2	0.0048	0.016	0.00039	30	4.8e-05	63	2	-1.6
<i>Macoubea guianensis</i>	1	580	39	0.43	4.9	16	0.0046	0.022	0.00069	25	3.6e-05	52	0.89	2.3
<i>Micropholis guianensis</i>	1	650	36	0.64	-0.06	9.1	0.0051	0.021	0.00049	24	4.4e-05	64	1.5	-0.32
<i>Moronebea coccinea</i>	3	640	36	0.6	1.8	12	0.0044	0.017	0.00052	29	3.4e-05	94	0.88	0.29
<i>Oxandra asbeckii</i>	2	190	24	0.78	1.8	11	0.0034	0.02	0.00037	24	4.1e-05	84	1.8	0.53
<i>Parinari campestris</i>	1	750	33	0.7	1.1	6.8	0.0037	0.016	0.00053	29	4.5e-05	48	2.5	-0.022
<i>Platonia insignis</i>	1	960	30	0.59	13	5.4	0.0041	0.015	0.00059	31	4.1e-05	70	2.6	1.8
<i>Pouteria engleri</i>	1	570	22	0.62	2	11	0.0075	0.025	0.00053	19	5e-05	75	1.3	0.49
<i>Pouteria eugenifolia</i>	1	670	43	0.74	-1.6	8.2	0.0031	0.015	0.00044	33	5.1e-05	70	1.5	-0.29
<i>Pouteria guianensis</i>	1	570	34	0.79	-2.1	7.5	0.003	0.017	0.00046	30	5e-05	79	2	-0.99
<i>Protium giganteum</i>	1	400	27	0.44	0.58	13	0.011	0.02	0.00085	23	3.6e-05	87	2.6	-1.7
<i>Recordoxylon speciosum</i>	9	550	35	0.68	-0.46	15	0.0043	0.023	0.00082	22	3.8e-05	60	1.3	0.61
<i>Sextonia rubra</i>	2	800	50	0.47	3.2	9.4	0.0045	0.018	0.00063	29	4.3e-05	84	1.6	0.41
<i>Simaba moretii</i>	1	810	36	0.38	3	7.6	0.0061	0.019	0.00072	25	4.7e-05	71	1.7	-0.33
<i>Sterculia pruriens</i>	7	690	40	0.46	1	12	0.021	0.02	0.0019	25	3.8e-05	59	1.9	0.18
<i>Swartzia polyphylla</i>	1	980	38	0.68	-3.9	12	0.0022	0.023	0.00066	22	4.1e-05	72	1.3	-0.38
<i>Symphonia globulifera</i>	6	920	26	0.56	0.037	10	0.0065	0.02	0.00063	24	3.1e-05	91	1.3	1.1
<i>Tapirira guianensis</i>	1	420	30	0.56	-0.76	12	0.0096	0.019	0.0011	25	4.5e-05	88	1.2	0.21
<i>Tapirira obtusa</i>	1	350	25	0.44	-0.22	11	0.0035	0.019	5e-04	26	4.5e-05	69	1.1	-0.98
<i>Tapura capitulifera</i>	2	620	33	0.76	-0.58	6	0.0065	0.013	0.00029	31	4.2e-05	94	3.4	0.79
<i>Tetragastris panamensis</i>	3	530	32	0.68	0.17	9	0.0047	0.016	0.00049	29	5.5e-05	74	2	-0.12
<i>Virola michelii</i>	8	520	38	0.47	0.93	11	0.0035	0.024	0.00063	22	4.8e-05	85	0.91	-1.7
<i>Vouacapoua americana</i>	17	730	42	0.69	-1.1	14	0.0073	0.026	0.0016	20	4.7e-05	56	1.5	-0.46

Table S1.1: Mean values of the 13 functional traits from 53 neotropical species used to study community response to seasonal climate variations; DBH<sub>max</sub> = Maximum diameter; Height<sub>max</sub> = Maximum height; WdDens = Trunk xylem density; Bark = Trunk bark thickness, corrected for girth (Baraloto et al., 2010); SLA = Specific leaf area; K = Foliar K<sub>m</sub>; N = Foliar N<sub>m</sub>; P = Foliar P<sub>m</sub>; CN = Foliar C:N; LTD = Leaf tissue density; Chlo = Laminar total chlorophyll; Tough = Laminar toughness; δ<sup>13</sup>C = Foliar δ<sup>13</sup>C composition, corrected for height (Baraloto et al., 2010).

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## Appendix S2. Climate data values and descriptive statistics during the study period

	mean	SD	unit
Global.irradiance	590.34	170.17	MJ.m <sup>-2</sup> .d <sup>-1</sup>
T.min	23.43	0.82	celsius degree
T.max	28.37	1.35	celsius degree
REW <sup>a</sup>	0.77	0.28	-
SWD <sup>b</sup>	0.23	0.28	-
VPD <sup>c</sup>	6.05	1.68	kPa
Rain	9.03	17.21	mm.d <sup>-1</sup>
Atmospheric.pressure	100.657	0.154	kPa
Relative.Humidity	82.58	4.34	%
Wind.speed	2.80	0.70	kn

<sup>a</sup>:Relative Extractable Water ,<sup>b</sup>: Soil Water Deficit (SWD=1-REW),<sup>c</sup>:Vapour Pressure Deficit

Table S2.1: descriptive statistics of the climatic variables

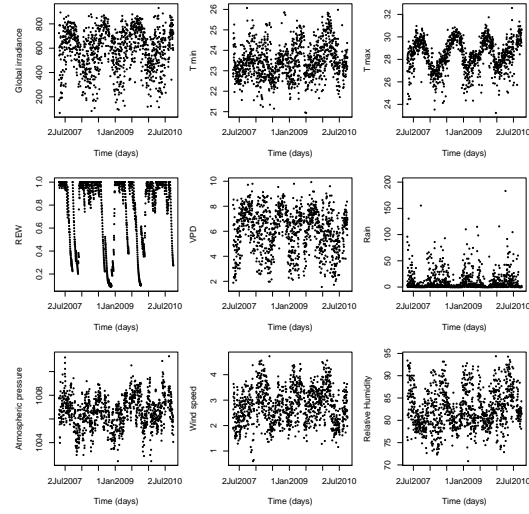


Figure S2.1: Variation of the climatic variables during the study period

## Appendix S3. Correlation between climate data

	irradiance	T min	T max	REW <sup>a</sup>	VPD <sup>b</sup>	Rain	P Atm <sup>c</sup>	H R <sup>d</sup>	Wind speed	SWD <sup>e</sup>
irradiance	1.00	0.03	0.76	-0.40	0.70	-0.52	0.11	-0.63	0.18	0.40
T min	0.03	1.00	0.06	-0.09	0.34	-0.26	-0.14	-0.34	0.45	0.09
T max	0.76	0.06	1.00	-0.60	0.62	-0.49	0.04	-0.50	-0.03	0.60
REW <sup>a</sup>	-0.40	-0.09	-0.60	1.00	-0.53	0.35	0.12	0.45	-0.08	-1.00
VPD <sup>b</sup>	0.70	0.34	0.62	-0.53	1.00	-0.64	0.02	-0.98	0.49	0.53
Rain	-0.52	-0.26	-0.49	0.35	-0.64	1.00	-0.01	0.63	-0.26	-0.35
P Atm <sup>c</sup>	0.11	-0.14	0.04	0.12	0.02	-0.01	1.00	-0.02	-0.07	-0.12
H R <sup>d</sup>	-0.63	-0.34	-0.50	0.45	-0.98	0.63	-0.02	1.00	-0.53	-0.45
Wind speed	0.18	0.45	-0.03	-0.08	0.49	-0.26	-0.07	-0.53	1.00	0.08
SWD <sup>e</sup>	0.40	0.09	0.60	-1.00	0.53	-0.35	-0.12	-0.45	0.08	1.00

<sup>a</sup>:Relative Extractable Water, <sup>b</sup>: Vapour Pressure Deficit, <sup>c</sup>: Atmospheric pressure, <sup>d</sup>:Relative Humidity, <sup>e</sup>: Soil Water Deficit (SWD=1-REW)

Table S3.1: Correlation coefficient of the climatic variables