Supplementary material

Characteristics of ecosystems under various anthropogenic impacts in a tropical forest region of Southeast Asia

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Subsection 1. Characteristics of the forest inventory plots.

Table S1.1. Characteristics of the forest inventory plots in Phnom Kulen National Park. Data source: annual precipitation, annual average daily mean air temperature, annual average daily sum global radiation and annual average daily mean vapour pressure deficit from Kulen weather station data from April 10, 2022, to April 9, 2023. Soil type and geology data from Matschullat (2014). Disturbance history information is obtained from field observation, discussion with local people and combining with Global Forest Change dataset of Hansen et al. (2013) and LandTrendr Pixel Time Series Plotter tool of Kennedy et al. (2018).

Plot ID	Latitude, Longitude	Elevation (m) Slope (°)	Annual precipitation (mm $year^{-1}$)	Annual average daily mean air Temperature (mean ± SD min – max; °C)	Annual average daily sum global radiation (mean ± SD min – max; kW m^{-2} day^{-1})	Annual average daily mean vapour pressure deficit (mean ± SD min – max; Pa)	Soil type	Geology	Disturbance history
EF1	N 13° 34' 12.4680" E 104° 7' 18.6096"	331, <5	2290.0	24.2 ± 2.0 17.78–28.6	16.5 ± 4.2 (3.6–25.2)	448.9 ± 211.1 (12.1–1069.4)	Acid Lithosols	Jurassic-Cretaceous sandstone	No clear-cut history; high wind disturbance and slight human disturbance in 2006, 2012, 2014. There are fewer large stands of trees, and the vegetation cover is less dense in comparison to EF2 and EF3.
EF2	N 13° 34' 25.3452" E 104° 7' 20.2872"	349, <5					Acid Lithosols	Jurassic-Cretaceous sandstone	No clear-cut history: wind disturbance history, slight human disturbance history included cutting leechee tree to harvest fruit. Most disturbances were 150 m around EF2 in 2004, 2006.
EF3	N 13° 34' 35.0508" E 104° 7' 20.6148"	339, <5					Acid Lithosols	Jurassic-Cretaceous sandstone	No clear-cut history; slight disturbances history mainly by the wind. Most of the disturbances were about 300 m around the plot in 2006, 2014, 2016. This plot has bigger stands compared to EF1 and EF2. The biggest stand found in the plot has DBH of 102 cm.
RF1	N 13° 33' 42.6132" E 104° 8' 1.2408"	331, <5					Red-yellow podzols	Jurassic-Cretaceous sandstone	Clear-cut in 2009; many disturbances history about 300 m to the east of RF1 in 2006, 2012, 2013.
RF2	N 13° 36' 15.6924" E 104° 7' 48.8928"	371, <5					Acid Lithosols	Jurassic-Cretaceous sandstone	Timber harvesting and burning experience from 2006; many disturbances history about 180 m

									to the west and east of RF2 in 2006, 2007, and 2010.
RF3	N 13° 37' 0.3612" E 104° 7' 41.358"	401, <5					Acid Lithosols	Jurassic-Cretaceous sandstone	Timber harvesting and burning experience from 2006; many disturbances history about 600 m around RF3 in 2009, 2010, 2011 and 2013.
CP1	N 13° 32' 18.8988" E 104° 12' 12.5568"	429, <5					Red-yellow podzols	Jurassic-Cretaceous sandstone	Latest clearing vegetations in 2013; many disturbances history about 300 m around CP1 in 2006, 2019.
CP2	N 13° 32' 29.3100" E 104° 12' 13.0284"	422, <5					Red-yellow podzols	Jurassic-Cretaceous sandstone	Latest clearing vegetations in 2012; many disturbances history about 180m around CP2 in 2007, 2009, 2013, 2019.
CP3	N 13° 32' 50.1864" E 104° 12' 13.1544"	430, <5					Red-yellow podzols	Jurassic-Cretaceous sandstone	Latest clearing vegetations in 2012; many disturbances history about 120 m around CP3 in 2007, 2009, 2016, 2019.

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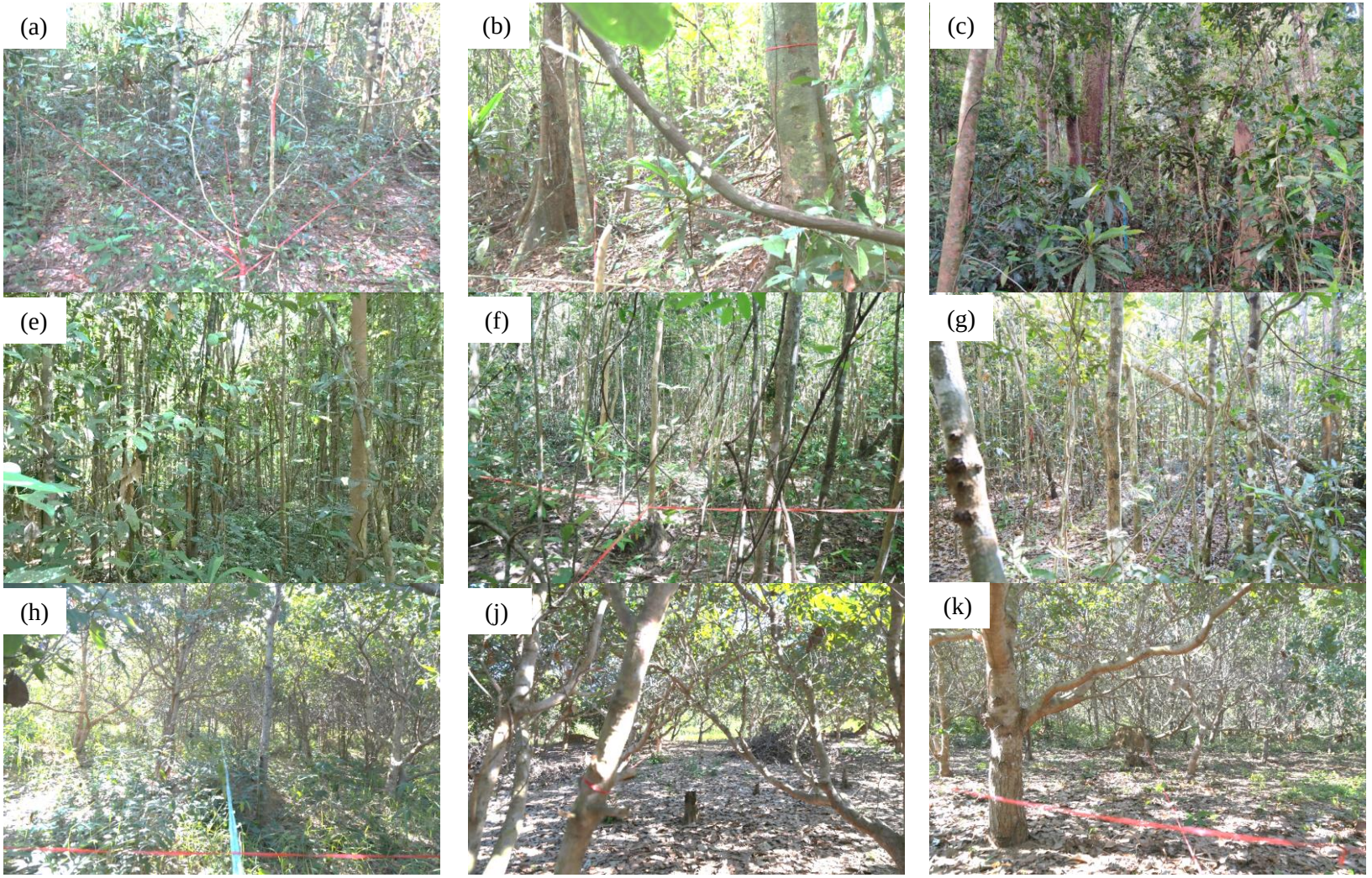


Figure S1.1. Photographs of the forest inventory plots in Phnom Kulen National Park. (a), (b), and (c) are the evergreen forest plots at the south (EF1), middle (EF2), and north (EF3); (e), (f) and (g) are the regrowth forest plots at the south (RF1), middle (RF2), and north (RF3). (h), (j) and (k) are the cashew plantation plots at the south (CP1), middle (CP2), and north (CP3).

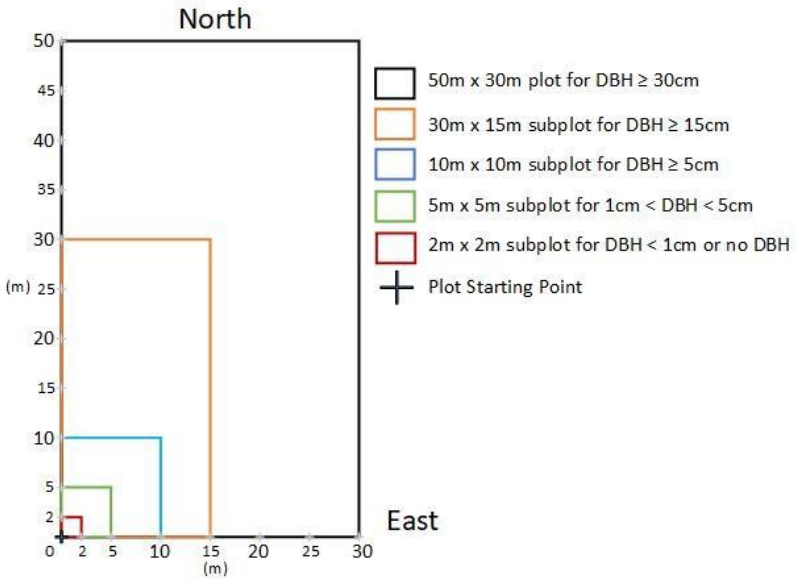


Figure S1.2. Design of forest inventory plots and sub-plots.

Table S1.2. Description of the decomposition level used to record lying and standing deadwood decomposition in this study. The proposed five-scale level of decomposition was modified based on a harmonizing scaling system between the Swedish National Forest Inventory (Swedish NFI, 2019) and the Cambodian National Forest Inventory (Than et al., 2018).

	Proposed in this study		**Cambodian NFI**		**Swedish NFI**	
N.	Scale	Definition	Scale	Definition	Scale	Definition
1	1	Raw wood. E.g. recently ***downed trees with green leaves***. Also trees with raw cambium when green leaves are missing.	1	Solid wood material	0	Raw wood. E.g. recently downed trees with green leaves. Also trees with raw cambium when green leaves are missing.
2	1.5	Hard dead wood. The stem volume consists of less than ***10% soft wood (***Decomposed part of stem compares to its original diameters) and a hard mantle area. Very little signs of decomposition of the stem.	1	Solid wood material	1	Hard dead wood. The stem volume consists of more than 90% hard wood and a hard mantel area. Very little signs of decomposition of the stem.
3	2	**S**omewhat decomposed wood. The volume of the stem consists of ***10–25% soft wood***. Remaining stem consists of hard wood. A tool, e.g. an earth spike can be pushed through the mantle, but not through the entire sapwood.	2	Partially rotten wood material	2	Somewhat decomposed wood. The volume of the stem consists of 10–25% soft wood. The remaining stem consists of hard wood. A tool, e.g., an earth spike can be pushed through the mantel, but not through the entire sapwood.

4	2.5	Decomposed dead wood. The stem volume consists of ***26–75% soft or very soft wood.***	2	Partially rotten wood material	3	Decomposed dead wood. The stem volume consists of 26–75% soft or very soft wood.
5	3	Very decomposed dead wood. The stem volume consists of ***76–100% soft or very soft wood***. A tool, e.g. an earth spike can be pushed through the entire stem. However, a hard core can exist.	3	Fully or partially rotten wood material	4	Very decomposed dead wood. The stem volume consists of 76–100% soft or very soft wood. A tool, e.g. an earth spike can be pushed through the entire stem. However, a hard core can exist.

Subsection 2. Meteorological station in Phnom Kulen National Park.

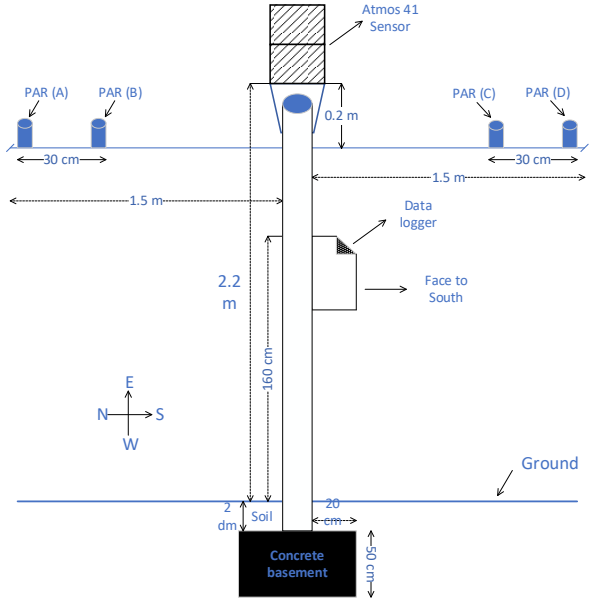


Figure S2.1. The diagram depicts the installation configuration of weather and photosynthetically active radiation (*PAR*) sensors at the Kulen Station. The weather sensor was installed at a height of 2.2 m above the ground, while the *PAR* sensors were placed at a height of 2 m above the ground.

Table S2.1. Descriptive statistics of weather parameters at Kulen meteorological station from April 10, 2022, to April 9, 2023, based on 15-minute timestep data.

Parameters	n	Mean	SD	Median	Min	Max	Sum
Global Radiation (W m^{-2})	35032	172.36	250.36	2.50	0.00	1065.60	6038158.00
Air Temperature °C)	35032	24.22	4.16	23.80	10.50	37.00	848479.00
Precipitation (mm)	35032	0.07	0.69	0.00	0.00	24.82	2290.03
Max Precipitation Rate (mm h^{-1})	35032	0.65	5.75	0.00	0.00	147.90	22924.10
Wind Direction (°)	34602	196.84	91.06	219.00	0.00	359.00	6811055.00
Wind Speed (m s^{-1})	34602	0.68	0.44	0.58	0.03	4.91	23416.40
Gust Speed (m s^{-1})	34602	1.71	1.27	1.38	0.07	10.95	59123.04
Relative Humidity (%)	35032	87.73	11.82	92.40	38.00	100.70	3073211.20
RH Sensor Temp (°C)	35032	25.01	5.24	23.80	10.10	40.00	876038.60

Atmospheric Pressure (kPa)	35032	97.47	0.28	97.46	96.50	98.44	3414504.80
VPD (kPa)	34602	0.45	0.51	0.22	0.00	3.11	15535.38
Reference Pressure (kPa)	35034	97.32	0.28	97.31	96.35	98.29	3409502.75
Lightning Activity (count)	35032	0.14	2.59	0.00	0.00	232.00	4935.00
Lightning Distance (km)	35032	0.29	2.30	0.00	0.00	37.00	10330.00

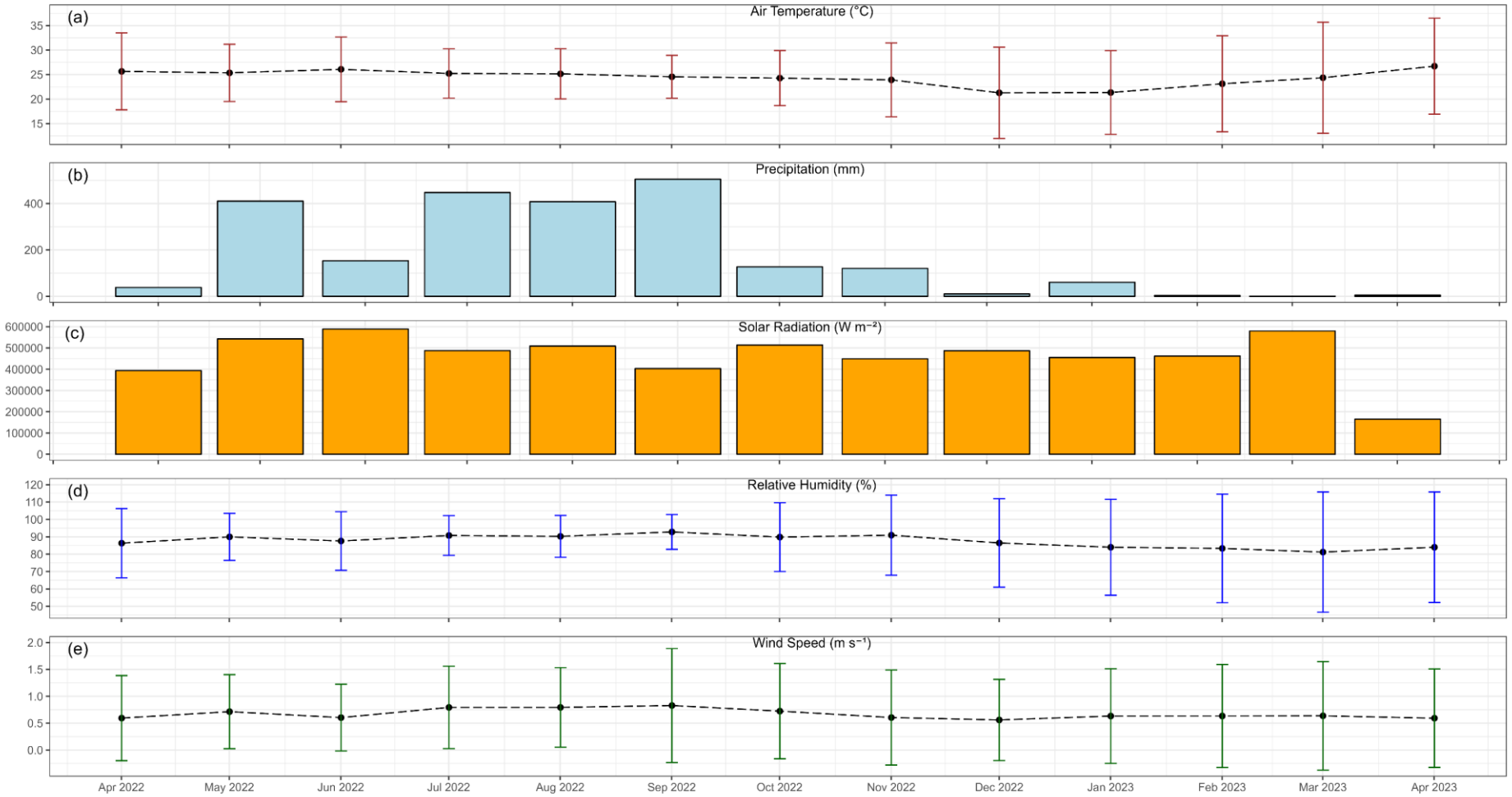


Figure S2.2. Monthly meteorological conditions at Kulen meteorological station from April 10, 2022, to April 9, 2023. (a) Monthly average air temperature (°C); (b) Monthly total precipitation (mm); (c) Monthly total global radiation (W m^{-2}); (d) Monthly average relative humidity (%); (e) Monthly average wind speed (m s^{-1}). The error bars in (a), (d), and (e) represent the 95% confidence interval (using standard deviation) from the monthly mean. The data were computed based on 15-minute timestep measurements.

Subsection 3. Soil conditions in the forest inventory plots.

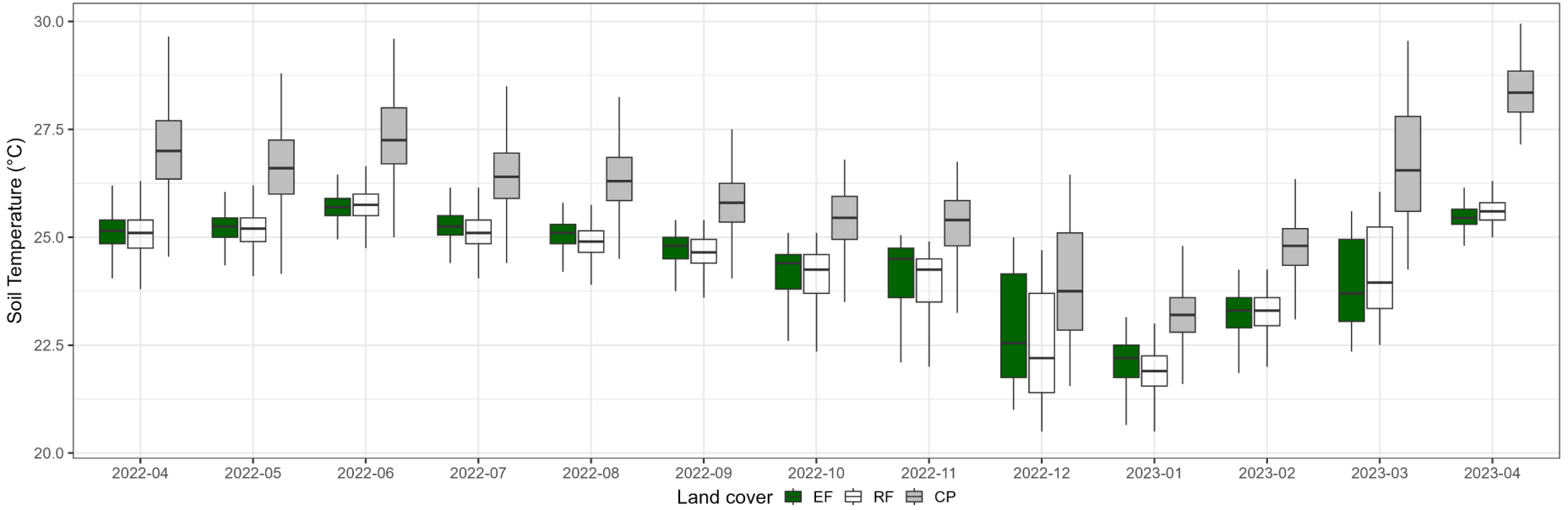


Figure S3.1. Monthly mean soil temperature (°C) for different land-cover classes from April 10, 2022, to April 9, 2023. The mean values were calculated by averaging the data from two representative plots for each land-cover class. Soil sensors were installed 0.2 m below the ground.

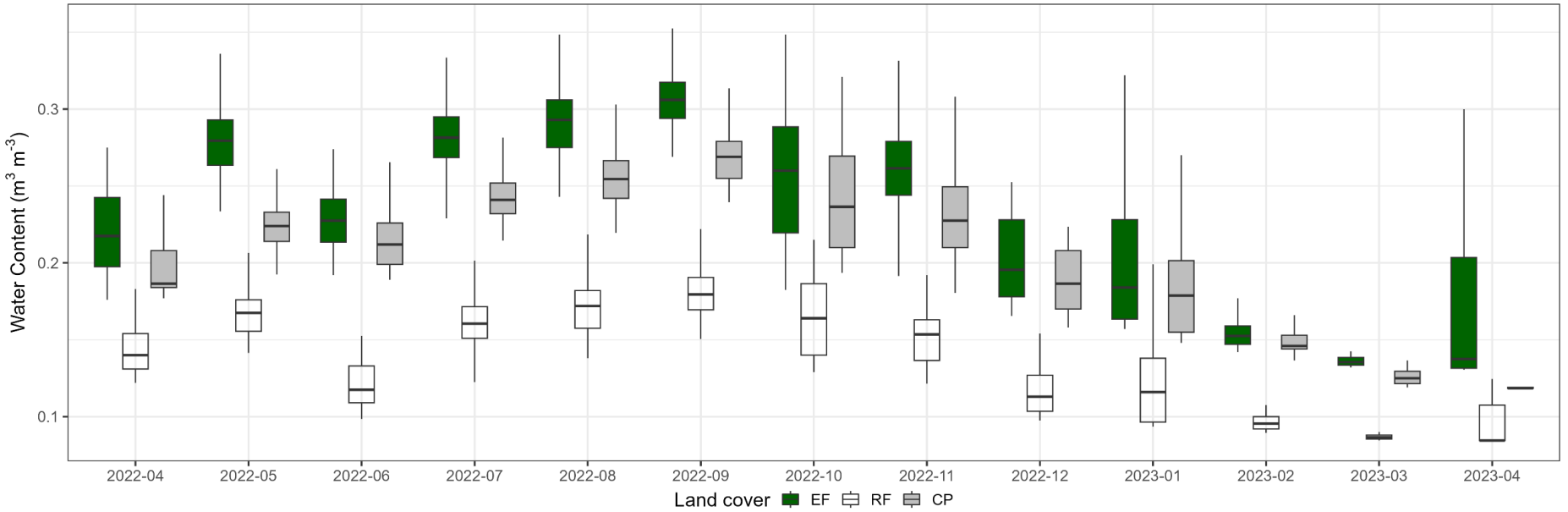


Figure S3.2. Monthly mean water content (m^3 m^{-3}) for different land-cover classes from April 10, 2022, to April 9, 2023. The mean values were calculated by averaging the data from two representative plots for each land-cover class. Soil sensors were installed 0.2 m below the ground.

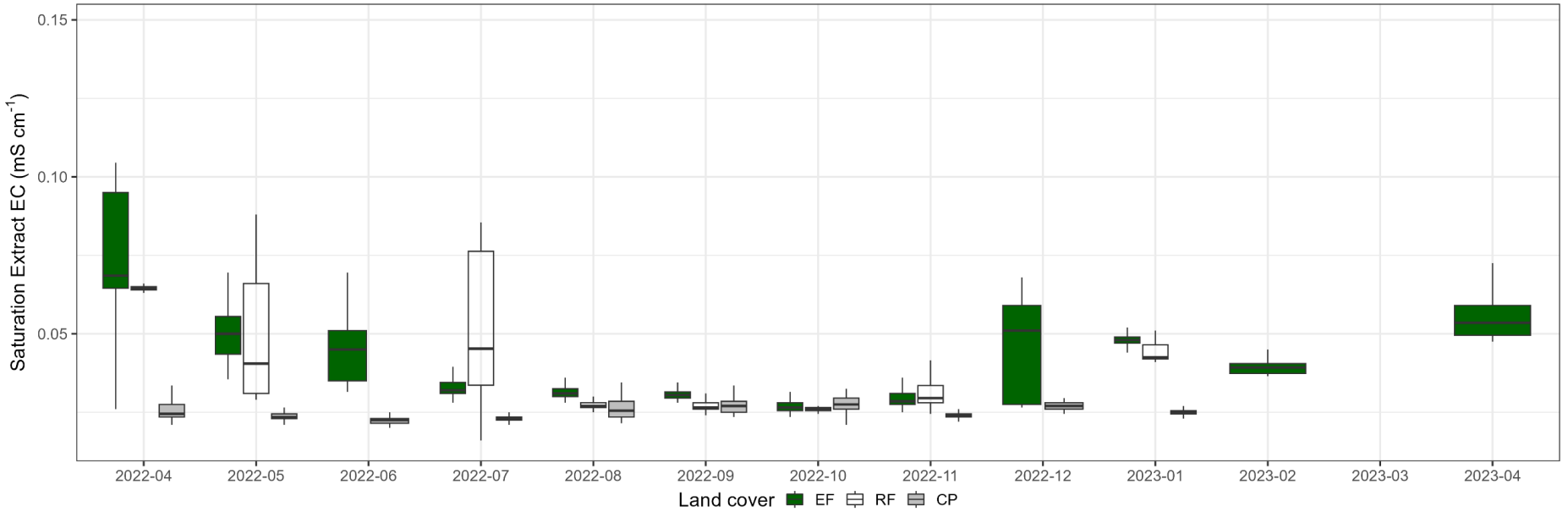


Figure S3.3. Monthly mean soil saturation extraction electrical conductivity (mS cm^{-1}) for different land-cover classes from April 10, 2022, to April 9, 2023. The mean values were calculated by averaging the data from two representative plots for each land-cover class. Soil sensors were installed 0.2 m below the ground.

Subsection 4. Correlation matrix meteorological and soil conditions.

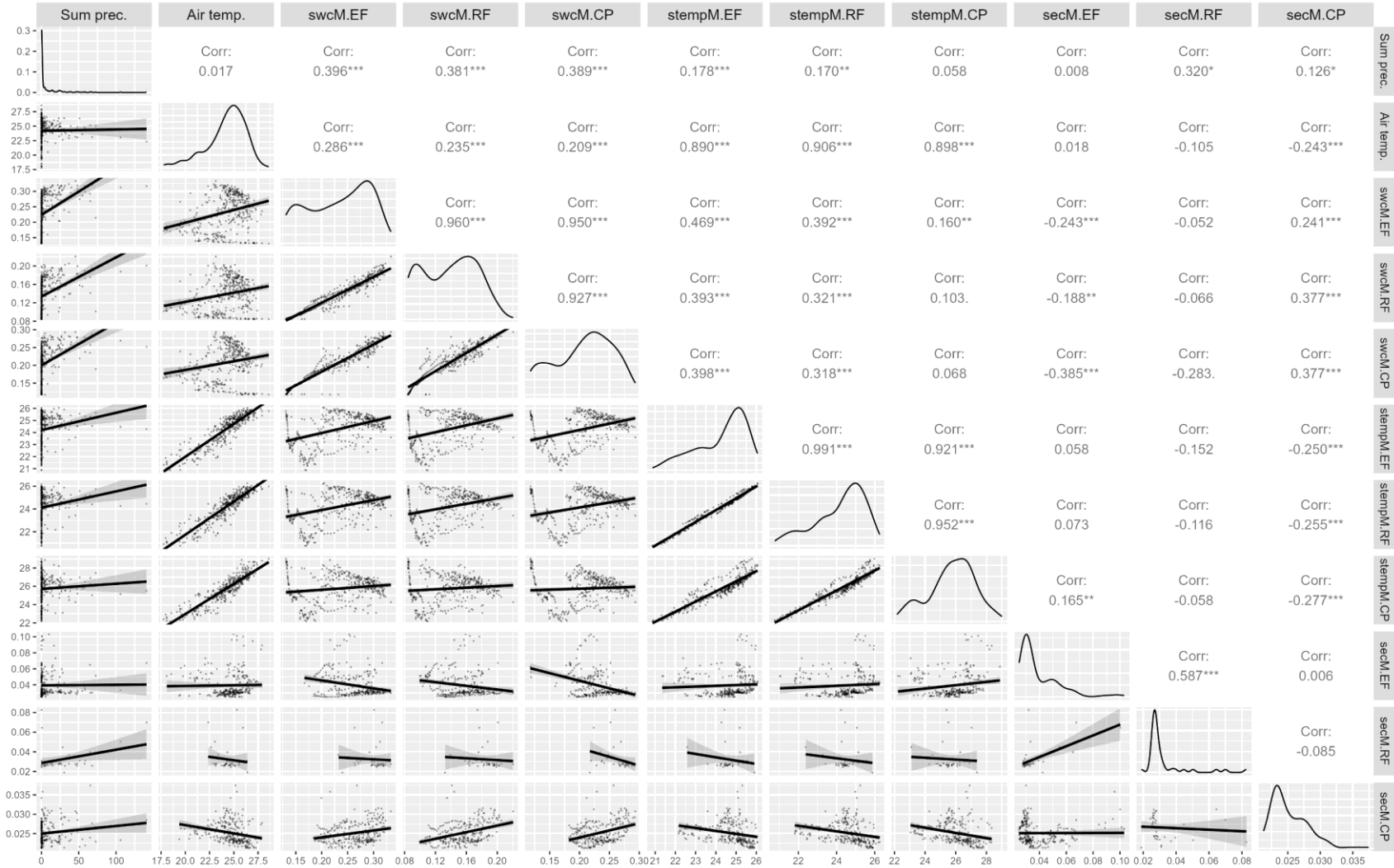


Figure S4.1. Correlation between daily sum precipitation ('Sum prec.'; mm), daily mean air temperature ('Air temp.'; °C), daily mean soil temperatures ('stemM'; °C), daily mean soil water content ('swcM'; $m^3\ m^{-3}$), daily mean soil saturation extraction electrical conductivity ('secM'; mS cm^{-1}) at Kulen from April 10, 2022, to April 9, 2023. The suffixes 'EF', 'RF', and 'CP' represent evergreen forests, regrowth forests, and cashew plantations. The precipitation and air temperature data were measured at Kulen's meteorological station (see Fig. 1); meanwhile, the soil data were the average of two measured plots in each land-cover class.

Subsection 5. Species diversity.

Table S5.1. Percentage of shared species among land-cover classes in the nine-forest inventory plot. The "Count" column indicates the total number of species observed in each land-cover class, whereas the "Sum" column indicates the total number of species recorded in each land-cover class. The "Shared%" column indicates the proportion of each species found in each land-cover class. Within each land-cover class, the "Cumulative Sum%" column displays the cumulative sum percentage, which accumulates from the highest to the lowest percentage of shared species.

N	Forest type	Species	Family	Count	Sum	Shared %	Cumulative sum %
1	Evergreen forest	Mesua ferrea	Calophyllaceae	18	136	13.24	13.24
2	Evergreen forest	Diospyros bejaudii	Ebenaceae	12	136	8.82	22.06
3	Evergreen forest	Litchi chinensis	Sapindaceae	11	136	8.09	30.15
4	Evergreen forest	Vatica odorata	Dipterocarpaceae	11	136	8.09	38.24
5	Evergreen forest	Hydnocarpus annamensis	Achariaceae	8	136	5.88	44.12
6	Evergreen forest	Memecylon acuminatum war. Tenuis	Melastomataceae	8	136	5.88	50.00
7	Evergreen forest	Polyalthia cerasoides	Annonaceae	7	136	5.15	55.15
8	Evergreen forest	Homalium tomentosum	Salicaceae	6	136	4.41	59.56
9	Evergreen forest	Maclura cochinchinensis	Moraceae	6	136	4.41	63.97
10	Evergreen forest	Limonia acidissima	Rutaceae	5	136	3.68	67.65
11	Evergreen forest	Melodorum fruticosum	Annonaceae	5	136	3.68	71.32
12	Evergreen forest	Sandoricum indicum	Meliaceae	5	136	3.68	75.00
13	Evergreen forest	Nageia wallichiana	Podocarpaceae	4	136	2.94	77.94
14	Evergreen forest	Artocarpus chama	Moraceae	3	136	2.21	80.15
15	Evergreen forest	Croton joufra	Euphorbiaceae	3	136	2.21	82.35
16	Evergreen forest	Nephelium hypoleucum	Sapindaceae	3	136	2.21	84.56
17	Evergreen forest	Syzygium lineatum	Myrtaceae	2	136	1.47	86.03
18	Evergreen forest	Unknown_2	Unknown_2	2	136	1.47	87.50
19	Evergreen forest	Agave sisalana	Asparagaceae	1	136	0.74	88.24
20	Evergreen forest	Anamirta cocculus	Menispermaceae	1	136	0.74	88.97
21	Evergreen forest	Apostasia wallichii	Orchidaceae	1	136	0.74	89.71
22	Evergreen forest	Baccaurea ramiflora	Phyllanthaceae	1	136	0.74	90.44
23	Evergreen forest	Calamus viminalis	Arecaceae	1	136	0.74	91.18
24	Evergreen forest	Capparis micracantha	Capparaceae	1	136	0.74	91.91
25	Evergreen forest	Catunaregam tomentosa	Rubiaceae	1	136	0.74	92.65
26	Evergreen forest	Cyperus elatus	Cyperaceae	1	136	0.74	93.38
27	Evergreen forest	Desmodium heterocarpon	Fabaceae	1	136	0.74	94.12
28	Evergreen forest	Dipterocarpus costatus	Dipterocarpaceae	1	136	0.74	94.85
29	Evergreen forest	Garcinia oliveri	Clusiaceae	1	136	0.74	95.59
30	Evergreen forest	Madhuca elliptica	Sapotaceae	1	136	0.74	96.32
31	Evergreen forest	Mitrephora vandaeflora	Annonaceae	1	136	0.74	97.06
32	Evergreen forest	Strychnos axillaris	Loganiaceae	1	136	0.74	97.79
33	Evergreen forest	Strychnos nux-vomica	Loganiaceae	1	136	0.74	98.53

34	Evergreen forest	Unknown_3	Unknown_3	1	136	0.74	99.26
35	Evergreen forest	Xanthophyllum glaucum	Polygalaceae	1	136	0.74	100.00
36	Regrowth forest	Vatica odorata	Dipterocarpaceae	54	168	32.14	32.14
37	Regrowth forest	Nephelium hypoleucum	Sapindaceae	14	168	8.33	40.48
38	Regrowth forest	Benkara fasciculata	Rubiaceae	12	168	7.14	47.62
39	Regrowth forest	Garcinia oliveri	Clusiaceae	12	168	7.14	54.76
40	Regrowth forest	Unknown_4	Unknown_4	6	168	3.57	58.33
41	Regrowth forest	Capparis micracantha	Capparaceae	5	168	2.98	61.31
42	Regrowth forest	Limonia acidissima	Rutaceae	5	168	2.98	64.29
43	Regrowth forest	Mesua ferrea	Calophyllaceae	5	168	2.98	67.26
44	Regrowth forest	Pterospermum grewiifolium	Malvaceae	5	168	2.98	70.24
45	Regrowth forest	Syzygium formosanum	Myrtaceae	5	168	2.98	73.21
46	Regrowth forest	Melodorum fruticosum	Annonaceae	4	168	2.38	75.60
47	Regrowth forest	Peltophorum dasyrrhachis	Fabaceae	4	168	2.38	77.98
48	Regrowth forest	Polyalthia cerasoides	Annonaceae	4	168	2.38	80.36
49	Regrowth forest	Maclura cochinchinensis	Moraceae	3	168	1.79	82.14
50	Regrowth forest	Memecylon acuminatum war. Tenuis	Melastomataceae	3	168	1.79	83.93
51	Regrowth forest	Artocarpus chama	Moraceae	2	168	1.19	85.12
52	Regrowth forest	Dalbergia cochinchinensis	Fabaceae	2	168	1.19	86.31
53	Regrowth forest	Diospyros bejaudii	Ebenaceae	2	168	1.19	87.50
54	Regrowth forest	Fagraea fragrans	Gentianaceae	2	168	1.19	88.69
55	Regrowth forest	Oroxylum indicum	Bignoniaceae	2	168	1.19	89.88
56	Regrowth forest	Psychotria revesii	Rubiaceae	2	168	1.19	91.07
57	Regrowth forest	Terrninalia catappa	Combretaceae	2	168	1.19	92.26
58	Regrowth forest	Unknown_3	Unknown_3	2	168	1.19	93.45
59	Regrowth forest	Willughbeia edulis	Apocynaceae	2	168	1.19	94.64
60	Regrowth forest	Apostasia wallichii	Orchidaceae	1	168	0.60	95.24
61	Regrowth forest	Catunaregam tomentosa	Rubiaceae	1	168	0.60	95.83
62	Regrowth forest	Dialium cochinchinense	Fabaceae	1	168	0.60	96.43
63	Regrowth forest	Diospyros sp.	Ebenaceae	1	168	0.60	97.02
64	Regrowth forest	Diospyros undulata	Ebenaceae	1	168	0.60	97.62
65	Regrowth forest	Madhuca elliptica	Sapotaceae	1	168	0.60	98.21
66	Regrowth forest	Miliusa mollis	Annonaceae	1	168	0.60	98.81
67	Regrowth forest	Unknown_2	Unknown_2	1	168	0.60	99.40
68	Regrowth forest	Unknown_5	Unknown_5	1	168	0.60	100.00
69	Plantation	Anacardium occidentale	Anacardiaceae	46	63	73.02	73.02
70	Plantation	Strychnos axillaris	Loganiaceae	3	63	4.76	77.78
71	Plantation	Euphorbia hirta	Euphorbiaceae	2	63	3.17	80.95
72	Plantation	Scleria levis	Cyperaceae	2	63	3.17	84.13
73	Plantation	Catunaregam tomentosa	Rubiaceae	1	63	1.59	85.71
74	Plantation	Diospyros bejaudii	Ebenaceae	1	63	1.59	87.30
75	Plantation	Echinochloa crus-galli	Poaceae	1	63	1.59	88.89
76	Plantation	Gardenia philastrei	Rubiaceae	1	63	1.59	90.48

77	Plantation	Heterosmilax paniculata	Smilacaceae	1	63	1.59	92.06
78	Plantation	Imperata cylindrica	Poaceae	1	63	1.59	93.65
79	Plantation	Maclura cochinchinensis	Moraceae	1	63	1.59	95.24
80	Plantation	Melodorum fruticosum	Annonaceae	1	63	1.59	96.83
81	Plantation	Nephelium hypoleucum	Sapindaceae	1	63	1.59	98.41
82	Plantation	Unknown_1	Unknown_1	1	63	1.59	100.00

Table S5.2. Species richness (S_R) and Shannon-Wiener index (S_H) across nine forest inventory plots in Kulen, Cambodia.

N.	Forest type	Plot ID	S_R (included seedling species)	S_R (excluded seedling species)	S_H
1	Plantation	CP1	8	1	1.14
2	Plantation	CP2	2	1	0.31
3	Plantation	CP3	3	1	0.39
4	Evergreen forest	EF1	20	15	2.68
5	Evergreen forest	EF2	18	14	2.66
6	Evergreen forest	EF3	12	11	2.11
7	Regrowth forest	RF1	12	9	2.11
8	Regrowth forest	RF2	16	13	2.33
9	Regrowth forest	RF3	12	8	1.47

Subsection 6. Functional diversity of different land covers and plots.

Table S6.1. Summary of the leaf traits, including leaf dry weight, leaf area, leaf length, specific leaf area (*SLA*, $m^2 kg^{-1}$), chlorophyll a and b content (*Chl*, mg g^{-1}), and leaf dry matter content (*LDMC*, mg g^{-1}), obtained from 30 plant woody species found in the Kulen inventory list. The table displays the number of species collected (n), the mean value, standard deviation (SD.), median, minimum (min.), and maximum (max.) value for each trait.

Statistics	Leaf dry weight (g)	Leaf length (cm)	Leaf area (cm^2)	*SLA* ($m^2 kg^{-1}$)	*Chl* (mg g^{-1})	*LDMC* (mg g^{-1})
n	30	30	30	30	30	30
Mean	0.52	16.51	80.96	16.97	10.28	378.96
SD	0.34	5.29	52.64	5.30	4.17	143.26
Min	0.06	5.46	10.66	10.46	4.86	139.92
Max	1.36	29.13	207.41	36.67	25.75	1000.00

Table S6.2. The mean and standard deviation values (SD) of leaf chlorophyll content (SPAD-value), leaf fresh weight (g), leaf dry weight (g), leaf length area (cm), leaf area (cm^2), specific leaf area (*SLA*, $m^2 kg^{-1}$), chlorophyll a and b content (*Chl*, mg g^{-1}), and leaf dry matter content (*LDMC*, mg g^{-1}) by species. The data included all 30 plant woody species from inventory data species which was used to compute the community weighted mean for *SLA*, *Chl* and *LDMC*. 'n' is the total number of sample leaves per species. * Standard deviation values include both the standard deviation of five-time measurements per leaf and the standard deviation of the total number of leaves sampled per species.

N.	Species	n	*Chl* (SPAD)		Fresh weight (g)		Dry weight (g)		Leaf length (cm)		Leaf area (cm^2)		*SLA* ($m^2 kg^{-1}$)		*Chl* (mg g^{-1})		*LDMC* (mg g^{-1})	
			Mean	SD*	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Anacardium occidentale	41	39.90	8.92	2.30	0.47	0.98	0.93	14.40	3.14	87.68	35.39	11.24	11.66	4.86	4.93	418.74	85.40
2	Artocarpus chama	7	53.18	1.44	3.37	0.58	1.18	1.67	24.26	6.10	205.30	91.55	17.80	1.19	11.59	0.89	349.38	5.67
3	Benkara fasciculata	6	49.85	3.95	0.84	0.03	0.26	0.11	13.15	1.40	43.01	7.28	16.88	3.25	9.81	1.05	307.68	42.01
4	Capparis micracantha	7	67.28	5.36	2.27	0.58	1.00	1.33	21.38	6.37	99.46	53.04	10.46	3.28	10.24	4.03	466.84	106.60
5	Catunaregam tomentosa	6	43.10	1.86	0.94	0.13	0.38	0.31	13.40	1.80	52.36	11.39	14.20	2.16	6.77	1.02	408.44	37.96
6	Croton joufra	11	57.24	7.32	5.69	0.28	1.36	2.08	29.13	7.37	207.41	70.31	15.12	3.55	10.90	1.97	253.77	50.08
7	Dalbergia cochinchinensis	6	53.60	1.46	0.18	0.01	0.06	0.03	5.46	0.55	10.66	1.43	16.91	1.84	11.14	1.21	361.10	35.60
8	Diospyros bejaudii	31	49.76	2.69	1.57	0.22	0.64	0.59	17.47	2.14	85.60	23.29	13.98	2.41	8.28	2.37	413.86	50.61
9	Diospyros undulata	6	68.08	4.46	1.29	0.17	0.46	0.30	18.67	1.72	73.16	14.03	16.59	2.59	16.42	3.25	349.97	44.30
10	Dipterocarpus costatus	6	53.81	2.49	1.88	0.40	0.84	0.78	21.38	3.41	140.34	60.04	17.25	2.90	11.32	0.98	438.84	44.24
11	Fagraea fragrans	6	55.54	2.50	1.10	0.06	0.26	0.14	12.65	0.95	44.06	3.66	17.46	3.48	12.07	1.72	234.69	27.28
12	Garcinia oliveri	22	50.61	2.46	2.70	0.28	0.55	1.36	17.57	5.09	85.01	39.81	15.95	2.74	9.71	2.95	206.89	36.16
13	Homalium tomentosum	11	52.31	1.44	0.58	0.06	0.20	0.17	13.71	2.60	50.63	13.77	25.05	1.82	16.05	3.51	351.46	18.33
14	Hydnocarpus annamensis	7	55.55	1.91	1.90	0.06	0.26	0.44	20.50	2.01	95.23	19.94	36.67	5.20	25.75	5.28	139.92	20.19
15	Limonia acidissima	10	49.50	2.25	2.46	0.51	1.03	1.37	23.14	2.32	120.12	51.84	12.12	2.17	7.02	0.90	433.31	60.40
16	Litchi chinensis	22	36.56	1.63	1.09	0.15	0.39	0.30	16.70	2.62	65.26	17.63	18.64	5.44	6.79	4.00	351.61	95.93
17	Maclura cochinchinensis	5	51.44	5.62	0.51	0.03	0.17	0.10	10.17	0.53	22.75	4.47	13.18	2.31	8.13	1.67	348.52	62.06

18	Melodorum fruticosum	41	53.46	3.84	0.46	0.07	0.20	0.12	11.83	2.42	30.93	6.26	16.19	3.87	10.85	3.82	433.44	66.60
19	Memecylon acuminatum war. Tenuis	12	54.66	2.15	0.97	0.07	0.36	0.19	12.44	1.52	42.90	9.86	11.99	1.67	8.10	1.11	369.01	35.35
20	Mesua ferrea	12	49.79	1.44	0.77	0.08	0.38	0.14	16.39	1.78	53.86	6.98	14.70	2.49	8.70	1.81	486.90	25.03
21	Nageia wallichiana	7	52.94	3.60	2.58	0.46	0.85	1.04	25.10	5.15	162.10	57.70	26.24	24.27	16.21	13.30	339.01	118.87
22	Nephelium hypoleucum	47	44.86	4.66	1.09	0.15	0.52	0.30	17.68	2.31	75.35	18.66	14.88	3.66	7.42	1.86	479.23	44.06
23	Oroxylum indicum	33	44.32	4.02	1.48	0.20	0.52	0.91	17.13	3.01	81.28	31.30	15.67	3.77	8.28	5.37	393.85	87.75
24	Peltophorum dasyrrhachis	8	38.06	5.91	0.45	0.04	0.16	0.12	8.78	1.95	24.72	6.99	15.68	1.46	6.32	1.25	354.31	35.66
25	Polyalthia cerasoides	6	53.08	2.12	0.80	0.04	0.30	0.11	14.38	1.76	54.51	9.87	18.45	2.45	11.94	1.47	368.80	21.78
26	Pterospermum grewiifolium	7	49.77	8.59	0.30	0.13	0.30	0.13	11.65	2.88	39.04	16.02	13.06	1.49	7.66	0.66	1000.00	0.00
27	Sandoricum indicum	20	48.03	3.54	1.85	0.20	0.43	0.68	16.68	3.11	96.25	37.23	24.52	7.76	13.46	3.85	226.84	30.43
28	Syzygium lineatum	7	48.16	1.98	0.36	0.05	0.15	0.12	10.97	1.26	20.64	6.21	14.31	1.09	8.01	0.84	407.93	19.94
29	Terrninalia catappa	16	35.18	2.12	3.64	0.73	0.90	3.40	22.43	10.06	177.10	143.60	19.80	3.27	7.11	1.71	292.53	89.40
30	Vatica odorata	27	46.08	2.27	1.66	0.30	0.62	0.75	16.77	3.52	81.99	29.15	14.11	3.05	7.53	2.59	382.09	65.49

Table S6.3. The values of specific leaf area (*SLA*, m^2 kg^{-1}), chlorophyll a and b content (*Chl*, mg g^{-1}), and leaf dry matter content (*LDMC*, mg g^{-1}) by species and inventory plots. The samples were collected from cashew plantations (CP), regrowth forests (RF), evergreen forests (EF), and the areas within 500 m of EF and RF plots (EF123 and RF123). In the *SLA*, *Chl*, and *LDMC* columns, 'n' = the number of leaf samples, 'Mean' = the mean value, and 'SD' = the standard deviation value.

N.	n. Species	Species name	Plot ID	Land cover	*SLA* (m^2 kg^{-1})			*Chl* (mg g^{-1})			*LDMC* (mg g^{-1})		
					n	Mean	SD	n	Mean	SD	n	Mean	SD
1	1	Anacardium occidentale	CP3	CP	5	13.57	0.59	5	5.64	0.67	5	418.74	-
2		Anacardium occidentale	CP2	CP	31	11.00	13.41	31	4.86	5.67	31	425.96	96.17
3		Anacardium occidentale	CP1	CP	5	10.41	1.64	5	4.09	0.69	5	373.98	25.55
4	2	Artocarpus chama	RF123	RF	7	17.80	1.19	7	11.59	0.89	7	349.38	5.67
5	3	Benkara fasciculata	RF123	RF	6	16.88	3.25	6	9.81	1.05	6	307.68	42.01
6	4	Capparis micracantha	RF123	RF	7	10.46	3.28	7	10.24	4.03	7	466.84	106.6
7	5	Catunaregam tomentosa	RF123	RF	6	14.2	2.16	6	6.77	1.02	6	408.44	37.96
8	6	Croton joufra	EF123	EF	6	17.75	2.61	6	11.92	1.97	6	216.06	34.33
9		Croton joufra	RF1	RF	5	11.97	0.38	5	9.67	1.18	5	299.02	10.19
10	7	Dalbergia cochinchinensis	RF123	RF	6	16.91	1.84	6	11.14	1.21	6	361.10	35.60
11	8	Diospyros bejaudii	CP3	CP	5	16.55	0.67	5	6.92	0.50	5	343.45	13.95
12		Diospyros bejaudii	CP1	CP	5	13.26	0.83	5	5.59	0.59	5	399.38	12.20
13		Diospyros bejaudii	EF123	EF	6	12.06	2.01	6	10.14	1.80	6	381.04	30.08
14		Diospyros bejaudii	EF1	EF	5	15.41	2.35	5	11.99	0.82	5	439.67	33.15
15		Diospyros bejaudii	EF3	EF	5	15.48	1.91	5	7.17	0.49	5	464.02	40.13
16		Diospyros bejaudii	RF2	RF	5	11.51	0.81	5	7.51	0.78	5	462.16	7.51
17		Diospyros undulata	RF123	RF	6	16.59	2.59	6	16.42	3.25	6	349.97	44.30
18	9	Dipterocarpus costatus	EF123	EF	6	17.25	2.9	6	11.32	0.98	6	438.84	44.24
19	10	Fagraea fragrans	RF123	RF	6	17.46	3.48	6	12.07	1.72	6	234.69	27.28
20	11	Garcinia oliveri	EF123	EF	6	16.81	3.11	6	14.09	1.35	6	200.37	30.13

21		Garcinia oliveri	EF2	EF	6	15.68	2.88	6	7.23	0.98	6	195.56	45.47
22		Garcinia oliveri	RF3	RF	5	13.22	0.83	5	8.7	0.84	5	249.73	3.73
23		Garcinia oliveri	RF2	RF	5	17.97	0.88	5	8.43	0.48	5	185.48	2.97
24	12	Grewwia eriocarpa	CP3	CP	5	21.31	1.55	5	8.65	1.10	5	434.07	16.09
25		Grewwia eriocarpa	CP1	CP	5	21.29	3.53	5	8.03	3.11	5	350.33	56.80
26	13	Homalium tomentosum	EF123	EF	6	23.94	1.72	6	19.01	0.95	6	353.50	25.47
27		Homalium tomentosum	EF3	EF	5	26.37	0.74	5	12.49	0.80	5	349.00	3.92
28	14	Hydnocarpus annamensis	EF123	EF	7	36.67	5.20	7	25.75	5.28	7	139.92	20.19
29	15	Limonia acidissima	EF123	EF	5	12.47	3.18	5	7.51	1.04	5	387.64	53.86
30		Limonia acidissima	RF1	RF	5	11.76	0.46	5	6.53	0.34	5	478.99	9.62
31	16	Litchi chinensis	EF123	EF	6	16.66	1.57	6	11.38	0.98	6	403.99	23.37
32		Litchi chinensis	EF2	EF	11	18.99	7.46	11	4.82	3.93	11	329.54	128.98
33		Litchi chinensis	EF3	EF	5	20.24	1.92	5	5.61	0.33	5	337.30	18.28
34	17	Maclura cochinchinensis	EF123	EF	5	13.18	2.31	5	8.13	1.67	5	348.52	62.06
35	18	Melodorum fruticosum	CP2	CP	6	11.43	0.45	6	8.34	0.59	6	515.98	34.46
36		Melodorum fruticosum	CP1	CP	5	18.33	0.83	5	9.83	0.99	5	395.68	22.36
37		Melodorum fruticosum	EF123	EF	7	22.10	4.34	7	18.51	1.37	7	340.58	48.96
38		Melodorum fruticosum	EF1	EF	5	16.13	1.00	5	11.09	0.51	5	484.77	17.11
39		Melodorum fruticosum	RF3	RF	5	15.52	0.47	5	10.99	0.57	5	453.48	13.36
40		Melodorum fruticosum	RF2	RF	5	15.54	0.99	5	7.99	0.71	5	429.33	22.99
41		Melodorum fruticosum	RF1	RF	8	14.10	2.06	8	8.21	1.36	8	434.35	62.65
42	19	Memecylon acuminatum war. Tenuis	EF123	EF	6	10.95	1.11	6	7.93	0.72	6	395.39	14.90
43		Memecylon acuminatum war. Tenuis	RF123	RF	6	13.04	1.50	6	8.27	1.46	6	342.62	29.26
44	20	Mesua ferrea	EF123	EF	6	16.88	0.83	6	10.32	0.65	6	469.12	22.85
45		Mesua ferrea	RF123	RF	6	12.52	1.27	6	7.09	0.73	6	504.67	9.88
46	21	Nageia wallichiana	EF123	EF	7	26.24	24.27	7	16.21	13.3	7	339.01	118.87
47	22	Nephelium hypoleucum	CP3	CP	5	18.41	0.38	5	5.12	0.34	5	411.34	11.67
48		Nephelium hypoleucum	CP1	CP	5	19.98	7.96	5	5.46	2.91	5	430.97	15.52
49		Nephelium hypoleucum	EF123	EF	6	11.27	0.41	6	7.38	0.59	6	428.69	14.52
50		Nephelium hypoleucum	EF1	EF	5	16.17	0.44	5	9.5	0.19	5	482.58	10.55
51		Nephelium hypoleucum	EF2	EF	7	13.90	0.30	7	9.28	0.18	7	526.93	10.77
52		Nephelium hypoleucum	RF3	RF	5	15.74	0.35	5	7.15	0.44	5	513.55	6.59
53		Nephelium hypoleucum	RF2	RF	5	12.87	0.63	5	6.11	0.51	5	513.43	13.64
54		Nephelium hypoleucum	RF1	RF	9	13.19	1.68	9	8.09	1.44	9	500.44	19.05
55	23	Oroxylum indicum	CP3	CP	5	15.49	0.95	5	8.60	0.21	5	374.16	8.49
56		Oroxylum indicum	EF3	EF	5	16.67	2.03	5	7.98	0.35	5	445.55	37.63
57		Oroxylum indicum	RF123	RF	6	17.96	8.59	6	14.85	10.57	6	243.30	71.14
58		Oroxylum indicum	RF3	RF	5	15.63	0.44	5	7.03	0.50	5	453.21	25.47
59		Oroxylum indicum	RF2	RF	5	14.22	0.60	5	5.62	0.23	5	440.95	6.76
60		Oroxylum indicum	RF1	RF	7	14.18	0.41	7	5.43	0.73	7	423.99	65.82
61	24	Peltophorum dasyrrhachis	RF1	RF	8	15.68	1.46	8	6.32	1.25	8	354.31	35.66
62	25	Polyalthia cerasoides	RF123	RF	6	18.45	2.45	6	11.94	1.47	6	368.80	21.78
63	26	Pterospermum grewiifolium	RF1	RF	7	13.06	1.49	7	7.66	0.66	7	1000.00	-

64	27	Sandoricum indicum	EF1	EF	5	31.64	1.68	5	16.81	2.31	5	213.03	14.49
65		Sandoricum indicum	EF2	EF	5	16.63	0.59	5	9.02	1.73	5	217.81	10.60
66		Sandoricum indicum	EF3	EF	5	31.47	5.18	5	16.28	2.97	5	207.61	31.50
67		Sandoricum indicum	RF1	RF	5	18.35	2.69	5	11.72	0.91	5	268.89	8.41
68	28	Syzygium lineatum	EF123	EF	7	14.31	1.09	7	8.01	0.84	7	407.93	19.94
69	29	Terrninalia catappa	CP3	CP	5	16.37	1.06	5	7.04	0.96	5	415.86	15.47
70		Terrninalia catappa	CP1	CP	5	22.61	2.81	5	5.36	0.61	5	249.75	34.40
71		Terrninalia catappa	RF123	RF	6	20.32	2.20	6	8.62	1.39	6	225.40	19.70
72	30	Vatica odorata	EF123	EF	6	11.96	2.79	6	6.77	2.40	6	406.42	77.64
73		Vatica odorata	EF1	EF	5	13.40	2.06	5	6.45	1.13	5	411.82	49.31
74		Vatica odorata	EF2	EF	6	15.63	1.15	6	11.44	1.53	6	301.63	46.41
75		Vatica odorata	RF3	RF	5	17.42	3.80	5	7.00	0.50	5	395.15	48.59
76		Vatica odorata	RF2	RF	5	12.28	1.29	5	5.36	0.67	5	406.63	13.84

Table S6.4. Woody species trait value sources and their shared percentages by plot of the data used to compute community weighted mean (CWM). In the column "Trait data source", the value "Plot" is species trait values derived directly from the species collected in its plot, "LC" value is species trait values obtained from its land-cover class when the trait species was not collected in its plot, and "Pool" value is trait values obtained from other land covers in Kulen; The column "Count" indicates the shared number of tree stands in the plot; "Total" is the total number of trees in the plot; and "Shared %" is the shared percentage of trees with different trait sources. "n. missing species" column is the number of missing species in each plot; the "Species" column contains the missing species in each plot. Seedlings were not included in this figure as they do not have *DBH* records and are not used in community weighted-mean calculations.

N.	Forest type	Plot ID	Trait data source	Tree stands			Missing tree species	
				Count	Total	Shared %	n. missing species	Species
1	Evergreen forest	EF1	Plot	17	38	44.74	NA	NA
2	Evergreen forest	EF1	LC	16	38	42.11	NA	NA
3	Evergreen forest	EF1	Pool	5	38	13.16	NA	NA
4	Evergreen forest	EF2	Plot	12	38	31.58	NA	NA
5	Evergreen forest	EF2	LC	24	38	63.16	NA	NA
6	Evergreen forest	EF2	Pool	1	38	2.63	NA	NA
7	Evergreen forest	EF2	Missing	1	38	2.63	1	Agave sisalana
8	Evergreen forest	EF3	Plot	13	33	39.39	NA	NA
9	Evergreen forest	EF3	LC	14	33	42.42	NA	NA
10	Evergreen forest	EF3	Pool	6	33	18.18	NA	NA
11	Regrowth forest	RF1	Plot	11	27	40.74	NA	NA
12	Regrowth forest	RF1	LC	15	27	55.56	NA	NA
13	Regrowth forest	RF1	Pool	1	27	3.70	NA	NA
14	Regrowth forest	RF2	Plot	34	58	58.62	NA	NA
15	Regrowth forest	RF2	LC	22	58	37.93	NA	NA
16	Regrowth forest	RF2	Pool	1	58	1.72	NA	NA

17	Regrowth forest	RF2	Missing	1	58	1.72	1	Dialium cochinchinense
18	Regrowth forest	RF3	Plot	38	52	73.08	NA	NA
19	Regrowth forest	RF3	LC	8	52	15.38	NA	NA
20	Regrowth forest	RF3	Missing	6	52	11.54	2	Syzygium formosanum, Madhuca elliptica
21	Plantation	CP1	Plot	18	18	100.00	NA	NA
22	Plantation	CP2	Plot	10	10	100.00	NA	NA
23	Plantation	CP3	Plot	18	18	100.00	NA	NA

Subsection 7. Stand structure of different land-cover classes and plots.

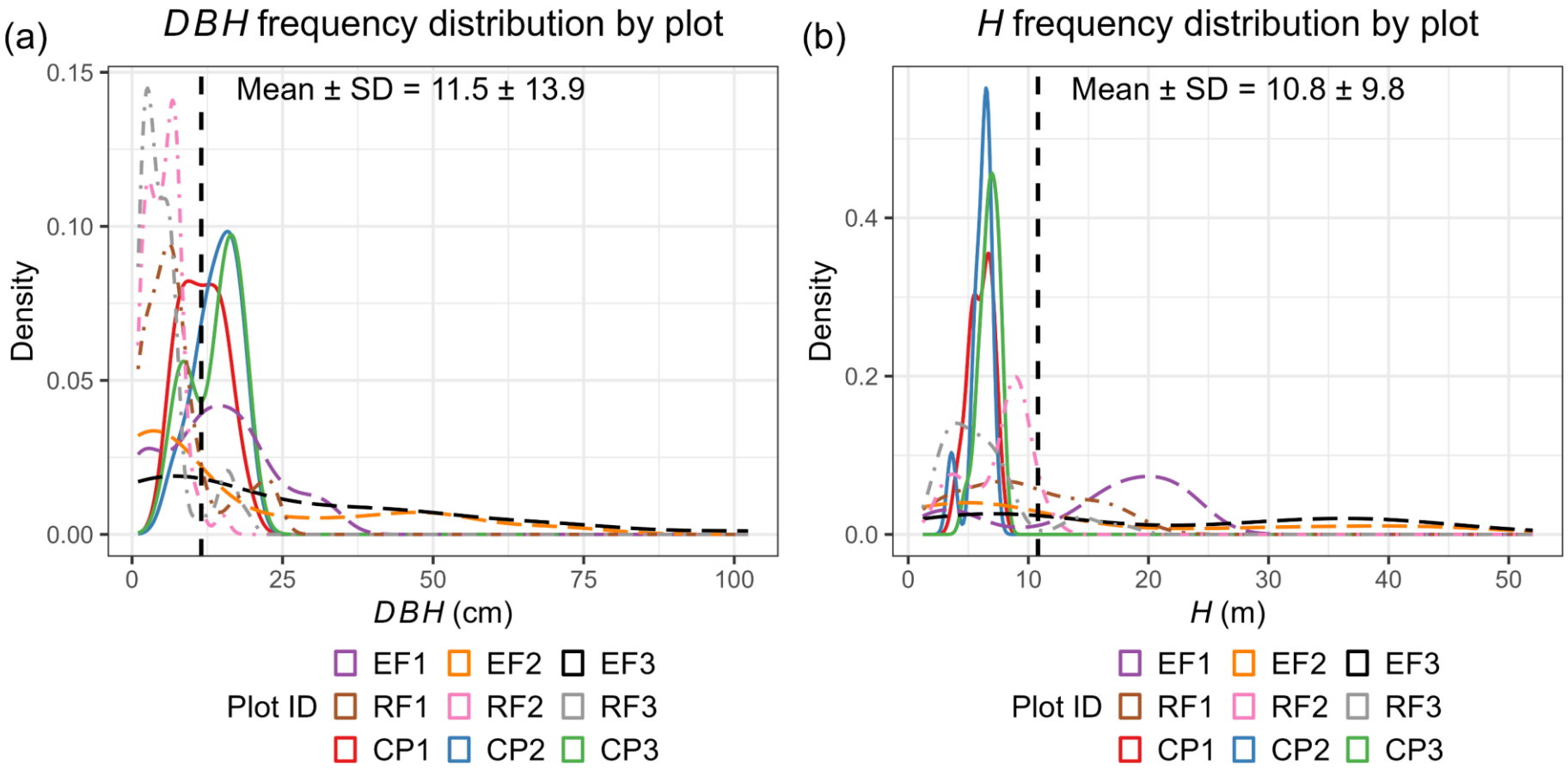
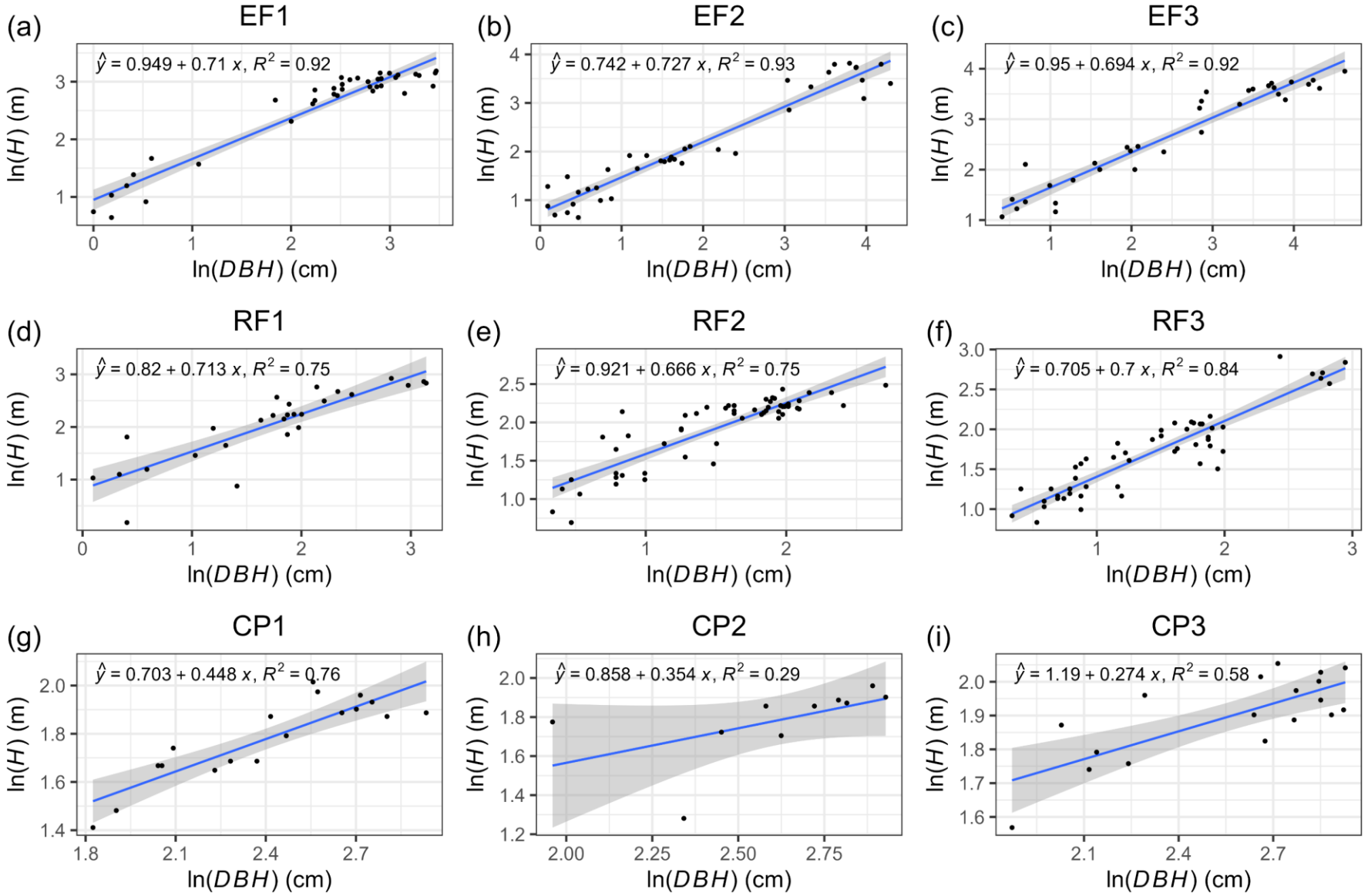


Figure S7.1. The frequency distributions of tree diameters at the breast height (*DBH*, cm) and height (*H*, m) across different plots. The plot labels "EF", "RF", and "CP" correspond to "evergreen forests", "regrowth forests" and "cashew plantations" respectively.

240 **Table S7.1.** Ordinary least square regression statistical table of between diameter at breast height ln(*DBH*) (cm) and height ln(*H*) (m) for evergreen forests (EF), regrowth forests (RF), and cashew plantations (CP) in Kulen.

	EF ln(*H*)						**RF ln(*H*)**						**CP ln(*H*)**					
Predictors	*p*	*t value*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*	*p*	*t value*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*	*p*	*t value*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*
(Intercept)	<0.001	16.53	0.85	0.02	0.05	0.18	<0.001	14.66	0.80	0.03	0.05	0.37	<0.001	7.03	0.94	0.09	0.13	0.81
ln(DBH)	<0.001	35.71	0.72	0.04	0.02	0.94	<0.001	21.70	0.70	0.04	0.03	0.81	<0.001	6.72	0.35	0.09	0.05	0.53
Observations	109						137						46					
R^2 / R^2 adjusted	0.92 / 0.92						0.78 / 0.78						0.51 / 0.50					



245 **Figure S7.2.** Relationship between diameter at breast height ln(*DBH*) (cm) and height ln(*H*) (m) for different inventory plots in evergreen forests (EF), regrowth forests (RF), and cashew plantations (CP) in Kulen. In (a), (b) and (c) present ln(*DBH*) (cm) and ln(*H*) (m) relationships at plots EF1, EF2, and EF3 of the evergreen forests; In (d), (e) and (f) present ln(*DBH*) (m) and ln(*H*) (m) relationships at plots RF1, RF2, and RF3 of regrowth forests; in (g), (h) and (i) present

DBH (cm) and *H* (m) relationships at plots CP1, CP2, and CP3 of cashew plantation. Based on the relationship below, the intercept parameter (K_1) and slop parameter (K_2) of the power law relationship between *DBH* (cm) and *H* (m) for each plot were obtained. The K_1 and K_2 parameters were used as community traits to investigate the relationship among other biodiversity and ecosystem property variables of various land-cover classes by plot level.

Table S7.2. The computed values of the intercept parameter (K_1) and slop parameter (K_2) of power-law relationship between diameter at breast height (*DBH*) (cm) and height (*H*) (m) for each plot.

N	Land-cover class	Plot ID	K_1	K_2
1	Evergreen forest (EF)	EF1	2.583	0.710
2	EF	EF2	2.100	0.727
3	EF	EF3	2.586	0.694
4	Regrowth forest (RF)	RF1	2.270	0.713
5	RF	RF2	2.512	0.666
6	RF	RF3	2.025	0.700
7	Cashew plantation (CP)	CP1	2.020	0.448
8	CP	CP2	2.358	0.354
9	CP	CP3	3.303	0.274

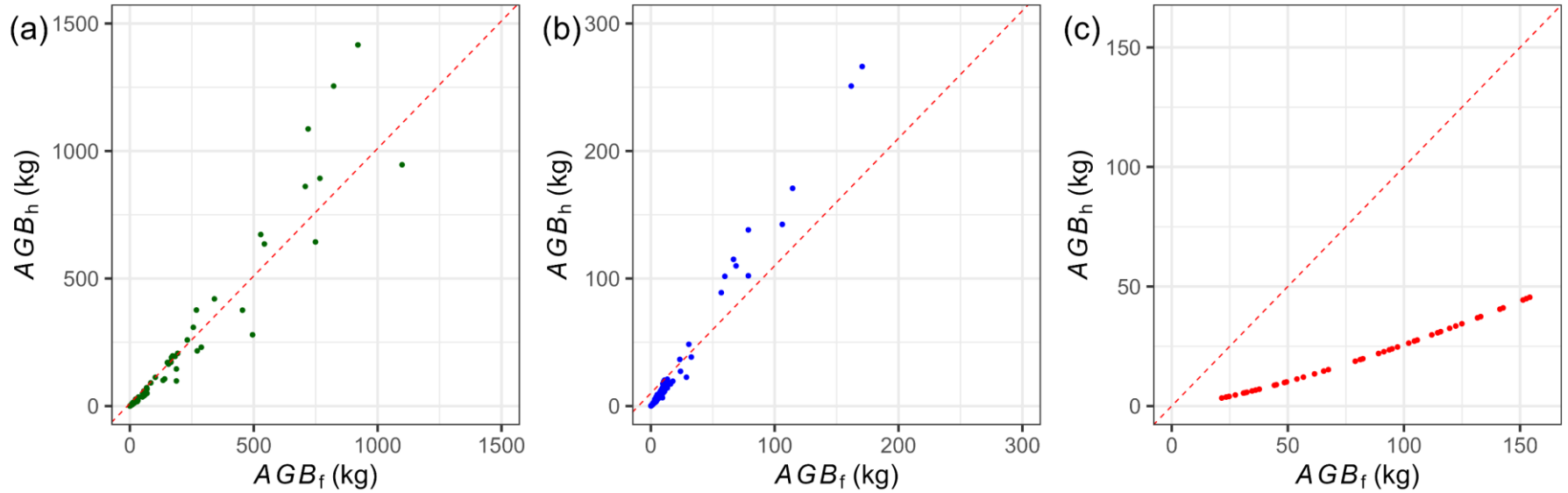


Figure S7.3. The 1:1 line plot comparison between aboveground biomass (*AGB*, kg) estimated by the diameter at breast height (*DBH*) and height (*H*) relationship (AGB_h, kg) and aboveground biomass estimated by adopted functions (AGB_f, kg) for evergreen forests (EF) (a), regrowth forests (RF) (b), and cashew plantations (CP) (c).

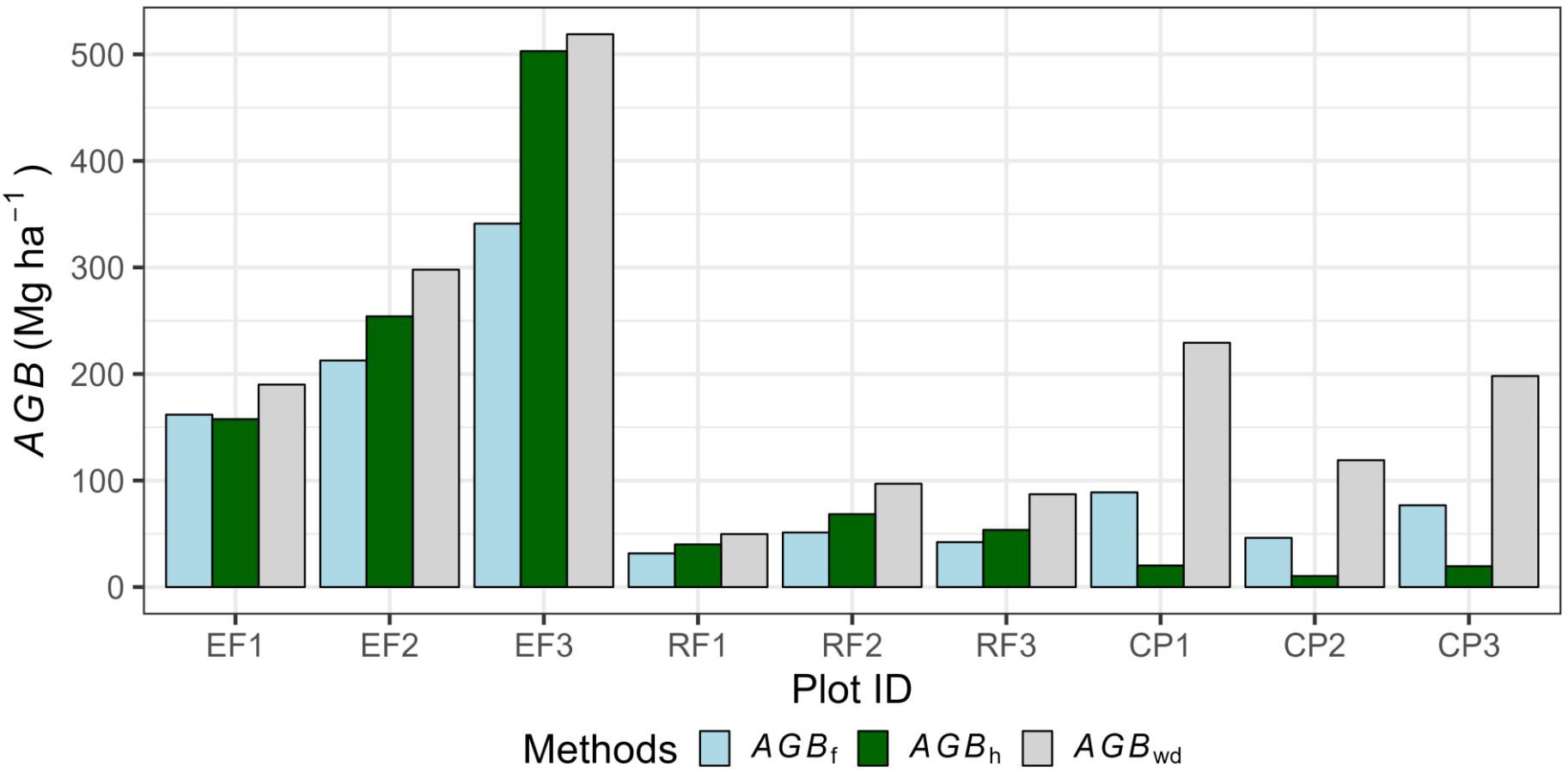


Figure S7.4. The estimation of aboveground biomass (*AGB*) (Mg ha^{-1}) by different methods for each inventory plot. "AGB_f" represents aboveground biomass estimated by adopted functions; "AGB_{wd}" represents aboveground biomass estimated by adopted functions utilizing species-specific wood density; "AGB_h" represents aboveground biomass estimated by the diameter at breast height (*DBH*) and height (*H*) relationship, along with species-specific wood density, for our study site.

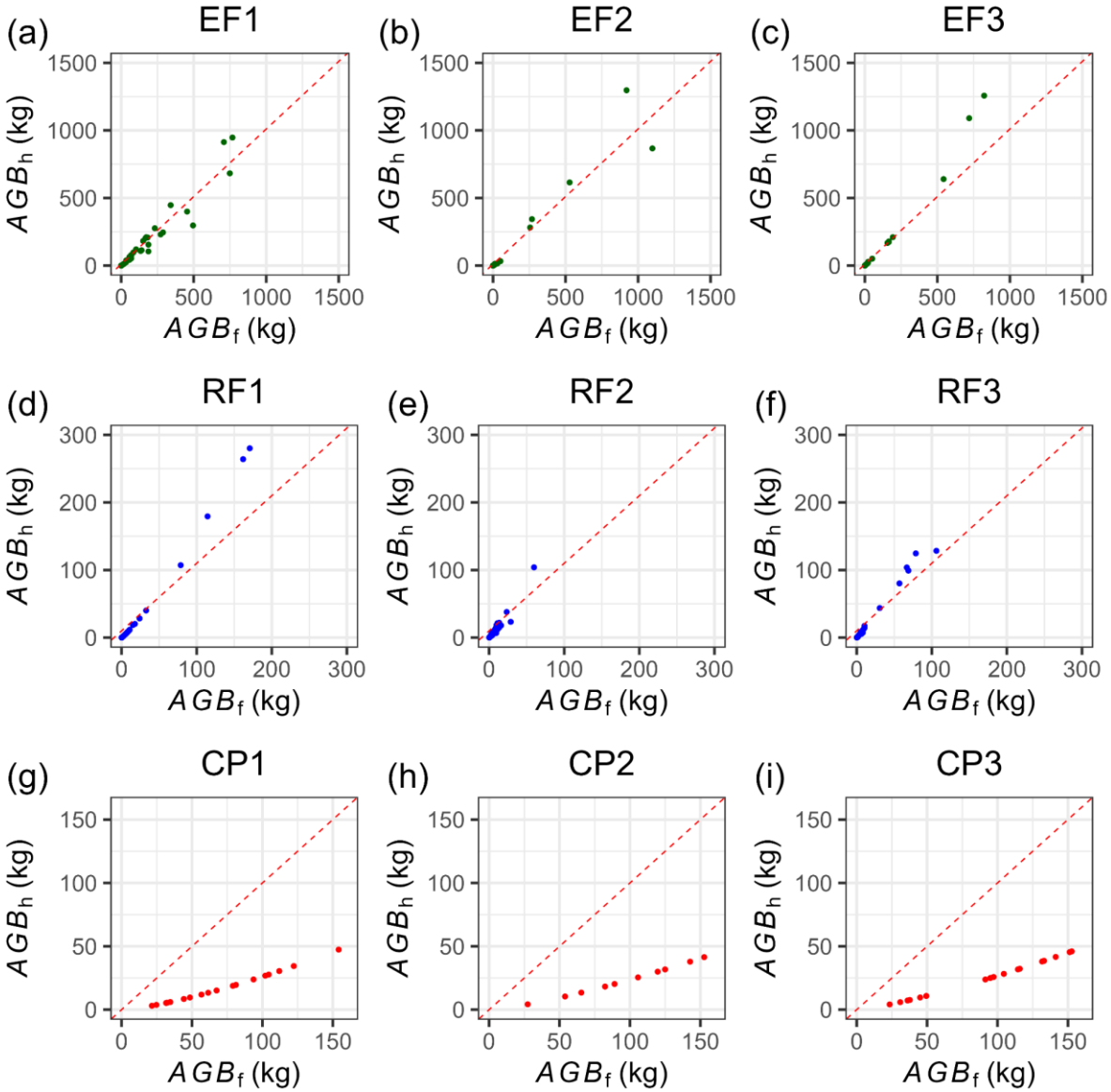


Figure S7.5. The 1:1 line plot comparison between aboveground biomass estimated by diameter at breast height (*DBH*) and height (*H*) relationship (AGB_h) and aboveground biomass estimated by adopted functions (AGB_f) for evergreen forest plots (EF1, EF2, and EF3) (a, b, and c), regrowth forest plots (RF1, RF2, and RF3) (d, e, and f), and cashew plantation plots (CP1, CP2, CP3) (g, h, and i).

Table S7.3. Distribution of stem density per hectare by DBH class for different land-cover classes. EF, RF, and CP stand for evergreen forests, regrowth forests, and cashew plantations.

N.	Land cover	DBH Class (cm)	Mean	SD	Min	Max	Sum	Shared percentage of number of stems
1	EF (n = 3)	5–15	800.00	435.89	500.00	1300.00	2400.00	78.72%
2	EF (n = 3)	15–30	162.95	130.20	66.66	311.08	488.84	16.03%
3	EF (n = 3)	30–100	53.36	30.57	20.01	80.04	160.08	5.25%
4	RF (n = 3)	5–15	2133.33	945.16	1400.00	3200.00	6400.00	97.30%
5	RF (n = 3)	15–30	59.25	51.31	0	88.88	177.76	2.70%
6	CP (n = 3)	5–15	933.33	450.92	500.00	1400.00	2800.00	87.50%
7	CP (n = 3)	15–30	133.32	58.79	88.88	199.98	399.96	12.50%

Table S7.4. Distribution of aboveground biomass (*AGB*) across diameter at breast height (*DBH*) classes for different land-cover classes. The total *AGB* estimated by AGB_h method was used in the calculation. EF, RF and CP stand for evergreen forests, regrowth forests, and cashew plantations.

N.	Land cover	*DBH* class (cm)	Mean ± SD (Mg ha^{-1})	Range (Mg ha^{-1})	Mean AGB_h (Mg ha^{-1})	Shared percentage of AGB_h
1	EF (n = 3)	0–5	6.51 ± 4.98	0.84–10.21	311.66 ± 183.88	2.09%
2	EF (n = 3)	5–15	28.71 ± 30.97	9.05–64.40		9.21%
3	EF (n = 3)	15–30	42.17 ± 20.9	30.05–66.30		13.53%
4	EF (n = 3)	30–100	234.27 ± 221.67	15.98–459.18		75.17%
5	RF (n = 3)	0–5	11.42 ± 7.72	2.70–17.36	54.19 ± 14.09	21.07%
6	RF (n = 3)	5–15	33.17 ± 16.55	18.01–50.82		61.21%
7	RF (n = 3)	15–30	9.60 ± 8.89	0.00–17.56		17.72%
8	CP (n = 3)	5–15	11.91 ± 5.02	7.22–17.21	16.70 ± 4.80	71.32%
9	CP (n = 3)	15–30	4.79 ± 2.26	3.02–7.34		28.68%

Subsection 8. Leaf area index and a fraction of absorbed photosynthetically active radiation.

Table S8.1. Descriptive statistics of observed leaf area index (*LAI*) (m^2 m^{-2}) measured at breast height and ground height for evergreen forests (EF), regrowth forests (RF), and cashew plantations (CP) by different months of a year. The "Month" column represents the months of the year (1 = January and 12 = December). The "n" column indicates the number of measurements in a specific month for each land cover.

N.	Land cover	Month	LAI_T (m^2 m^{-2})						LAI_C (m^2 m^{-2})					
			n	Mean	SD	Median	Min	Max	n	Mean	SD	Median	Min	Max
1	CP	3	3	3.42	0.42	3.19	3.16	3.91	3	2.92	0.23	2.98	2.67	3.12
2	CP	4	3	2.76	0.31	2.79	2.44	3.05	3	2.41	0.22	2.44	2.18	2.61
3	CP	6	3	3.86	0.45	3.94	3.37	4.26	3	3.05	0.28	3.04	2.77	3.33
4	CP	9	3	2.83	0.78	3.26	1.93	3.29	3	2.18	0.25	2.19	1.92	2.42
5	CP	11	4	2.75	0.57	2.79	2.18	3.24	4	2.22	0.19	2.21	2.04	2.42
6	CP	12	5	2.97	0.55	2.88	2.27	3.79	5	2.48	0.45	2.59	1.95	3.09
7	EF	3	3	5.9	0.51	5.84	5.42	6.43	3	4.03	0.5	4.15	3.48	4.45
8	EF	4	3	6.36	0.29	6.32	6.1	6.67	3	5.31	0.08	5.29	5.25	5.4
9	EF	6	3	7.36	0.43	7.22	7.01	7.84	3	4.83	0.26	4.84	4.56	5.08
10	EF	9	3	6.27	0.39	6.46	5.82	6.53	3	4.53	0.32	4.65	4.17	4.78
11	EF	11	4	5.8	0.42	5.93	5.21	6.15	4	4.48	0.45	4.61	3.83	4.86
12	EF	12	5	5.7	0.43	5.72	5.07	6.25	5	4.59	0.47	4.62	3.85	5.01
13	RF	3	3	4.91	0.52	4.71	4.53	5.5	3	3.75	0.34	3.61	3.51	4.14
14	RF	4	3	6.11	0.42	6.19	5.66	6.48	3	5.26	0.3	5.28	4.96	5.55
15	RF	6	3	6.79	0.26	6.66	6.62	7.09	3	5.53	0.24	5.4	5.39	5.81
16	RF	9	3	5.32	0.67	5.3	4.66	5.99	3	4.45	0.62	4.77	3.74	4.85
17	RF	11	4	5.42	0.48	5.47	4.9	5.83	4	4.36	0.52	4.54	3.6	4.76
18	RF	12	5	5.17	0.53	5.24	4.54	5.8	5	4.68	0.58	4.59	4.11	5.64

Subsection 9. Relationships among ecosystem characteristics.

Table S9.1. Ordinary least squares regression model fit statistics for ln(AGB_h) and ln(S_R), ln(AGB_h) and ln(LAI_T), and ln(AGB_h) and ln(SLA_{cwm}). The number of observations is the number of plots. 'LAI_T' is a mean of total leaf area index, 'AGB_h' is aboveground biomass, 'SLA_{cwm}' is a community-weighted mean.

	ln(AGB_h)						ln(AGB_h)						ln(AGB_h)					
Predictors	*p*	*Statistic*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*	*p*	*Statistic*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*	*p*	*Statistic*	*Estimates*	*standardized std. Error*	*std. Error*	*std. Beta*
(Intercept)	<0.001	6.09	2.72	0.21	0.45	0.01	0.384	-0.93	-1.05	0.25	1.13	-0.16	0.026	-2.81	-8.38	0.24	2.99	-0.14
ln(S_R)	0.006	3.83	0.86	0.25	0.22	0.59												
ln(LAI_T)							0.002	4.67	3.33	0.27	0.71	0.69						
ln(SLA_{cwm})													0.004	4.20	4.63	0.27	1.10	0.73
Observations	9						9						9					
R^2 / R^2 adjusted	0.68 / 0.63						0.76 / 0.72						0.72 / 0.68					

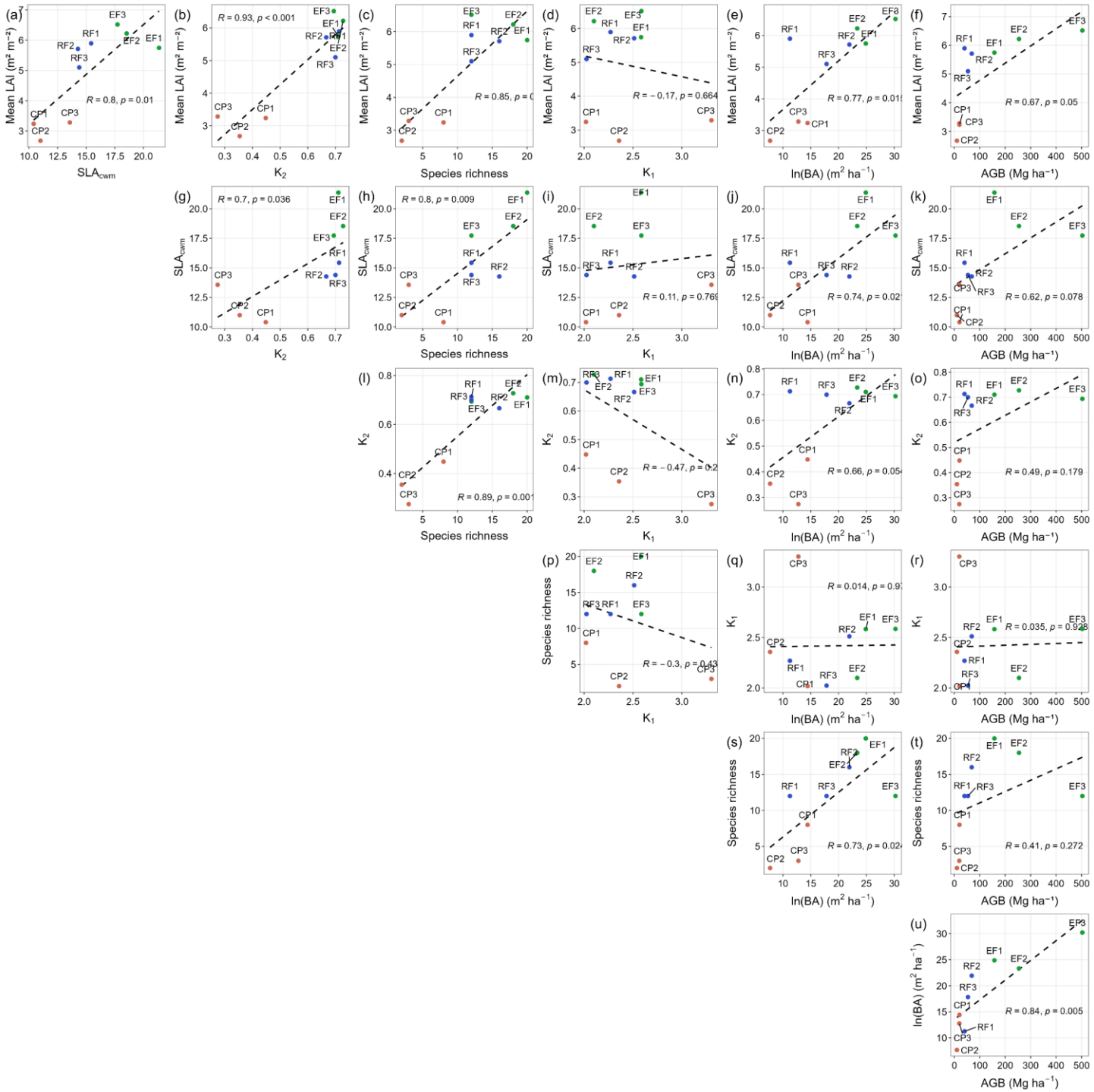

(a)
Mean LAI (m² m⁻²)
SLA$_{cwm}$
R = 0.8, p = 0.01
(b)
R = 0.93, p < 0.001
K$_2$
(c)
Species richness
R = 0.85, p =
(d)
K$_1$
R = −0.17, p = 0.664
(e)
ln(BA) (m² ha⁻¹)
R = 0.77, p = 0.01
(f)
AGB (Mg ha⁻¹)
R = 0.67, p = 0.05
(g)
SLA$_{cwm}$
R = 0.7, p = 0.036
K$_2$
(h)
Species richness
R = 0.8, p = 0.009
(i)
K$_1$
R = 0.11, p = 0.769
(j)
ln(BA) (m² ha⁻¹)
R = 0.74, p = 0.02
(k)
AGB (Mg ha⁻¹)
R = 0.62, p = 0.078
(l)
K$_2$
Species richness
R = 0.89, p = 0.001
(m)
K$_1$
R = −0.47, p = 0.2
(n)
ln(BA) (m² ha⁻¹)
R = 0.66, p = 0.05
(o)
AGB (Mg ha⁻¹)
R = 0.49, p = 0.179
(p)
Species richness
K$_1$
R = −0.3, p = 0.43
(q)
ln(BA) (m² ha⁻¹)
R = 0.014, p = 0.9
(r)
AGB (Mg ha⁻¹)
R = 0.035, p = 0.93
(s)
Species richness
ln(BA) (m² ha⁻¹)
R = 0.73, p = 0.02
(t)
Species richness
AGB (Mg ha⁻¹)
R = 0.41, p = 0.272
(u)
ln(BA) (m² ha⁻¹)
AGB (Mg ha⁻¹)
R = 0.84, p = 0.005

Figure S9.1. The relationship between biodiversity and ecosystem property variables of different land-cover classes in Kulen. 'EF', 'RF', and 'CP' are evergreen forests, regrowth forests and cashew plantations. The suffixes '1', '2', and '3' are plot ID. The variables: 'Mean *LAI*' means *LAI* measured at the ground level (m^2 m^{-2}), 'SLA_{cwm}' is community weighted mean of specific leaf area (kg m^{-2}), 'Species richness' is the counted number of species in each sample plot. 'K_1' and 'K_2' are the intercept and slope of the relationship between *H* and *DBH* at plot level (unitless). '*AGB*' is aboveground biomass (Mg ha^{-1}) computed based on the relationship between *DBH* and *H* (AGB_h).

Subsection 10. Comparison of species richness, Shannon-Wiener index and *LAI* with previous studies.

Table S10.1. Comparison of species richness (S_R) with previous studies.

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Region	Forest type	Species richness (species per ha)	Methods	References
Kulen, Cambodia	Old-growth tropical evergreen forest	87 (13 species per plot)	Excluding seedling species, 3 plots, each 30 m x 50 m	In this study
Kulen, Cambodia	Old-growth tropical evergreen forest	113 (17 species per plot)	Including seedling species, 3 plots, each 30 m x 50 m	In this study
Kulen, Cambodia	Regrowth evergreen forest	67 (10 species per plot)	Excluding seedling species, 3 plots, each 30 m x 50 m	In this study
Kulen, Cambodia	Regrowth evergreen forest	87 (13 species per plot)	Including seedling species, 3 plots, each 30 m x 50 m	In this study
Central plains in Cambodia	Various tropical forest types	~50-110 (Estimated based on species accumulation curves)	*DBH* > 10, 119 plots, each 50 m × 10 m	Theilade et al. (2022)
Tanintharyi, Myanmar	Moist evergreen forests	83–86	*DBH* ≥ 5 cm, 25 sampling plots, each 20 m × 20 m	Zin and Mitlöhner (2020)
Meghalaya, Northeast India	Tropical evergreen forests	83	*DBH* ≥ 15 cm, 1 ha sampling plot	Tynsong et al. (2022)
Pahang National Park, Malaysia	Tropical rainforest	280–450	*DBH* ≥ 10 cm, 25 sampling plots, each 20 m × 20 m	Nazip (2012)
Amazonia	Various forest types across Amazonia	3–357	*DBH* ≥ 10 cm, 2046 Sampling plots, 0.5–2 ha each	Ter Steege et al. (2023)

Table S10.2. Comparison of Shannon-Wiener index (S_H) with previous studies.

Region	Forest type	Shannon-Wiener index (unitless)	Methods	References
Kulen, Cambodia	Old-growth tropical evergreen forest	2.48	Including seedling species, 3 plots, each 30 m x 50 m	In this study
Kulen, Cambodia	Regrowth evergreen forest	1.97	Including seedling species, 3 plots, each 30 m x 50 m	In this study
Pahang National Park, Malaysia	Tropical rainforest	3.42–3.97	*DBH* ≥ 10 cm, 25 sampling plots, each 20 m × 20 m	Nazip (2012)
Tanintharyi, Myanmar	Moist evergreen forests	4.42–4.45	*DBH* ≥ 5 cm, 25 sampling plots, each 20 m × 20 m	Zin and Mitlöhner (2020)
Nam Dong, Vietnam	Lowland regrowth tropical forest	2.77–3.00	*DBH* ≥ 2.5 cm, 40 sampling plots, each 20 m x 20 m	Yen and Cochard (2017)
Thua Thien-Hue, Vietnam	secondary tropical evergreen broad-	2.78–3.04	*DBH* ≥ 6 cm , 40 sampling plots, each 20 m x 20 m	Van and Cochard (2017)

		leaved monsoon forest

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Table S10.3. Comparing canopy leaf area index (LAI_C) and total leaf area index (LAI_T) of evergreen forests (EF) and regrowth forests (RF) with previous studies. Mean ± SD or SEM is a mean plus or minus a standard deviation or a standard error of a mean.

No.	Region	Vegetation type	*LAI* (m^2 m^{-2}) (Mean ± SD or SEM)	Methods	References
Evergreen forests					
1	Kulen, Cambodia	Old-growth tropical evergreen forest	6.16 ± 0.67 (SD)	LAI-2000 (LAI_T, at ground height)	In this study
2	Kulen, Cambodia	Old-growth tropical evergreen forest	4.62 ± 0.50 (SD)	LAI-2000 (LAI_C, at 1.3 m height)	In this study
3	Kampong Thom, Cambodia	Old-growth tropical dry evergreen forest	4.05	LAI-2000 (LAI_C, unknown height)	Ito et al. (2007)
4	La Selva, Costa Rica	Upland old-growth tropical wet forest	6.00 ± 0.32 (SEM)	Direct harvests (LAI_T, Floor to canopy top leaf harvests, 55 points across 500 ha)	Clark et al. (2008)
5	La Selva, Costa Rica	Old-growth tropical forest	5.10 ± 0.20 (SEM)	LAI-2000 (LAI_C, above 1 m height)	Olivas et al. (2013)
6	La Selva, Costa Rica	Old-growth tropical forest	4.90–6.00 ± 0.20 (SEM)	Hemispherical photographs (LAI_C, above 1 m height)	Olivas et al. (2013)
7	Amazonas, Brazil	Old-growth tropical forest	5.70	Direct harvests (LAI_T, Harvested four 10 m × 10 m forest plots)	McWilliam et al. (1993)
8	Amazonas, Brazil	Old-growth tropical forest	5.58	Hemispherical photographs (LAI_C, at 1 m height)	Marthews et al. (2012)
9	Pará State, Brazil	Old-growth tropical forest	4.30–5.70	LAI-2000 (100 points, unknown height, five dates)	Metcalfe et al. (2010)
10	Amazon region	Tropical forest	3.76–4.67	Geosciences Laser Altimeter System (LAI_C, unknown height)	Tang and Dubayah (2017)
11	Amazon region	Tropical forest	4.58–5.15	Geosciences Laser Altimeter System (LAI_T)	Tang and Dubayah (2017)
12	Banten Province, Indonesia	Tropical broadleaf forest	4.40–8.40	Hemispherical Photographs (LAI_C, at 1.5 m height)	Khairiah et al. (2017)
13	North Karnataka state, India	Tropical evergreen forest	4.64 ± 1.20 (SD)	LAI-2200 (LAI_C, unknown height, 32 30 m x 30 m plots)	Middinti et al. (2017)
Regrowth forests					
1	Kulen, Cambodia	Regrowth evergreen forest	5.57 ± 0.76 (SD)	LAI-2000 (LAI_T, at ground height)	In this study
2	Kulen, Cambodia	Regrowth evergreen forest	4.66 ± 0.70 (SD)	LAI-2000 (LAI_C, at 1.3 m height)	In this study
3	Guangxi, China	Tropical secondary forest	5.27 ± 1.16 (SD)	LAI-2200 (LAI_C, at 1.5 m height)	Xie et al. (2023)

4	Heredia Province, Costa Rica	18-year tropical secondary forest	3.97 ± 0.55 (SEM)	Direct harvests (LAI_C, at 1 m height)	Clark et al. (2021)
5	Heredia Province, Costa Rica	25-year tropical secondary forest	7.21 ± 0.62 (SEM)	Direct harvests (LAI_C, at 1 m height)	Clark et al. (2021)
6	Heredia Province, Costa Rica	35-year tropical secondary forest	6.45 ± 0.69 (SEM)	Direct harvests (LAI_C, at 1 m height)	Clark et al. (2021)
Cashew plantations					
1	Kulen, Cambodia	Monoculture of cashew plantations	3.07 ± 0.61	LAI-2000 (LAI_T, at ground height)	In this study
2	Kulen, Cambodia	Monoculture of cashew plantations	2.52 ± 0.42	LAI-2000 (LAI_C, at 1.3 m height)	In this study
3	Tamil Nadu, India	Monoculture of cashew plantations	0.52–1.25	AccuPAR LP-80 (LAI_C, unknown height)	Kumaresh et al. (2023)

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