

Supplementary Material

Fig. S1 - Illustration of a sample of the shape of cross-sections obtained 30 cm above irregularities using the close-range photogrammetric approach. (a) cross-sections of *Entandrophragma cylindricum* (Sprague) Sprague, (b) cross-sections of *Piptadeniastrum africanum* (Hook. f.) Brenan.

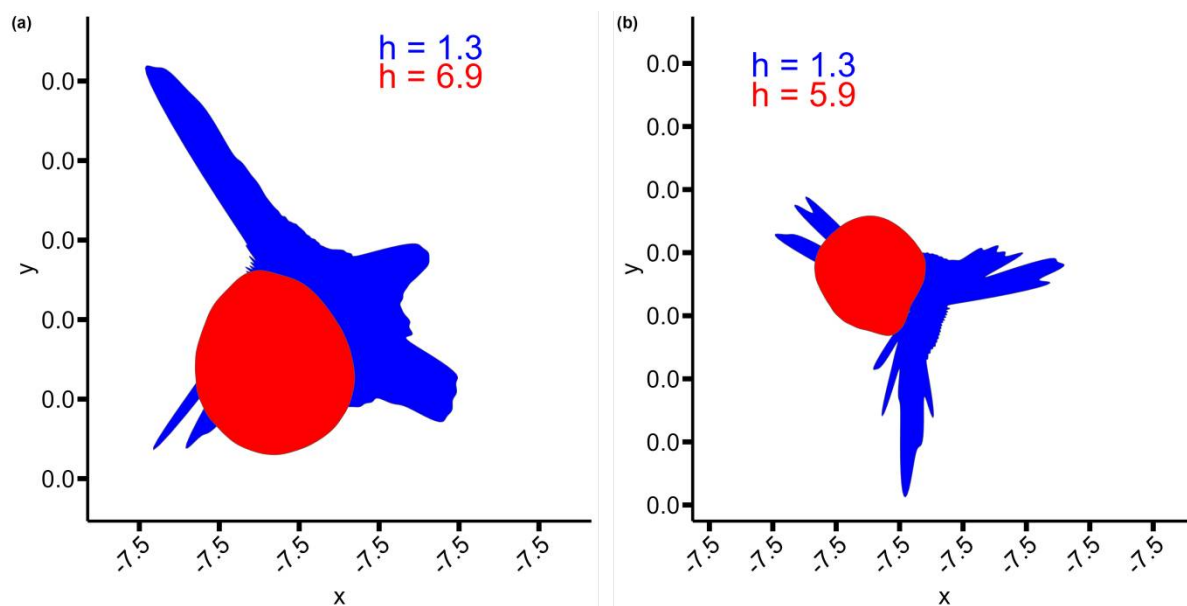


Fig. S2 - Diameter variation according to diameter measurement methods within each forest type. With (a) diameter variation for all diameter at breast height data, (b) diameter variation according to the two diameter classes ($D < 70$: small diameter class, $D > 70$: large diameter class). The significance level (* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$) is indicated and the individual letters constitute the Wilcoxon test.

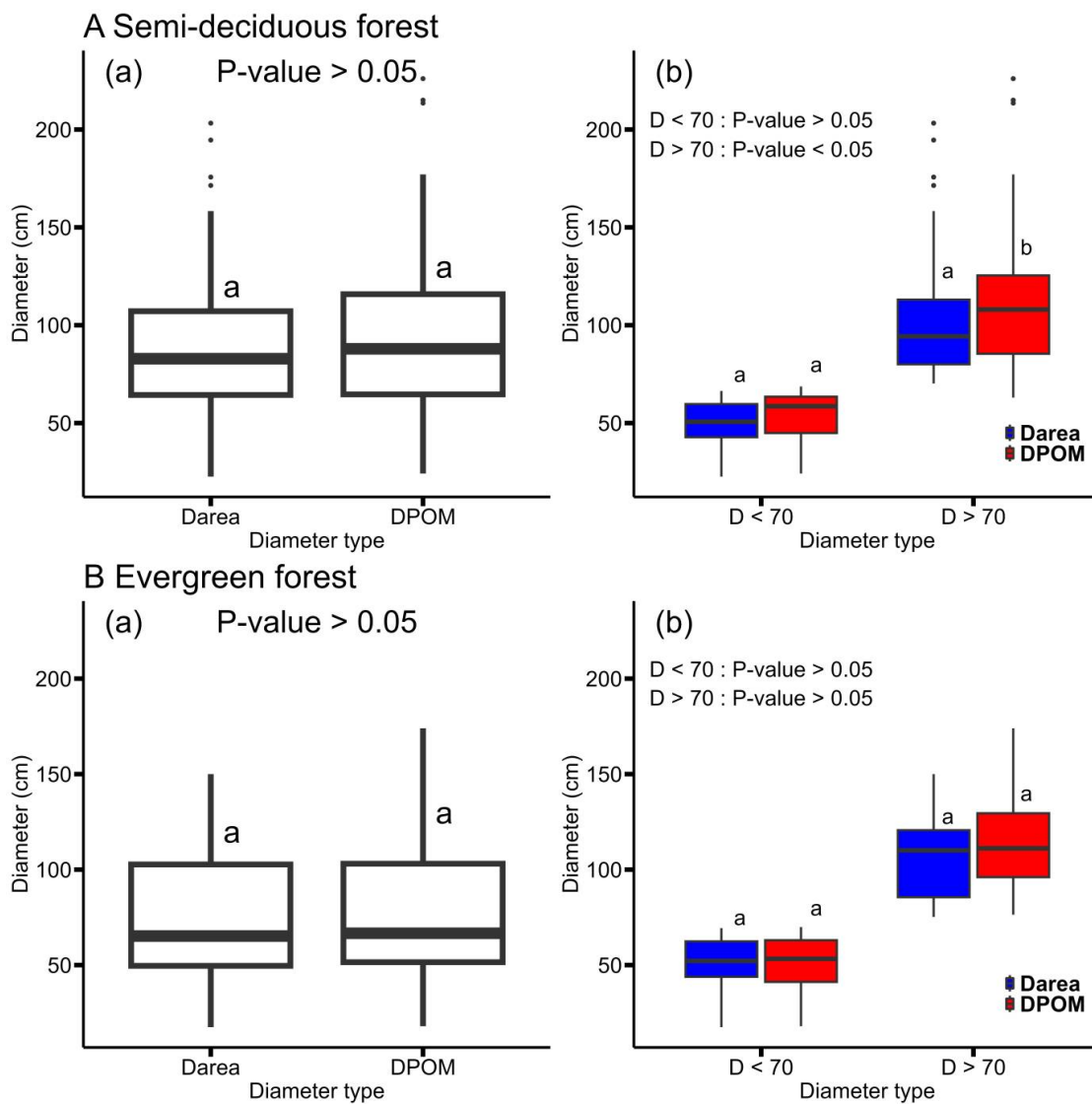


Fig. S3 - Bland-Altman plot of the agreement between Darea and DPOM as a function of diameter class size: absolute differences between Darea and DPOM using DPOM in semi-deciduous and evergreen forest as reference. The black horizontal lines indicate the lower and upper limits of agreement, constructed taking into account two standard deviations. The dotted red line indicates the bias of the comparison, constructed as the mean of the absolute differences. The solid red line is the identity line.

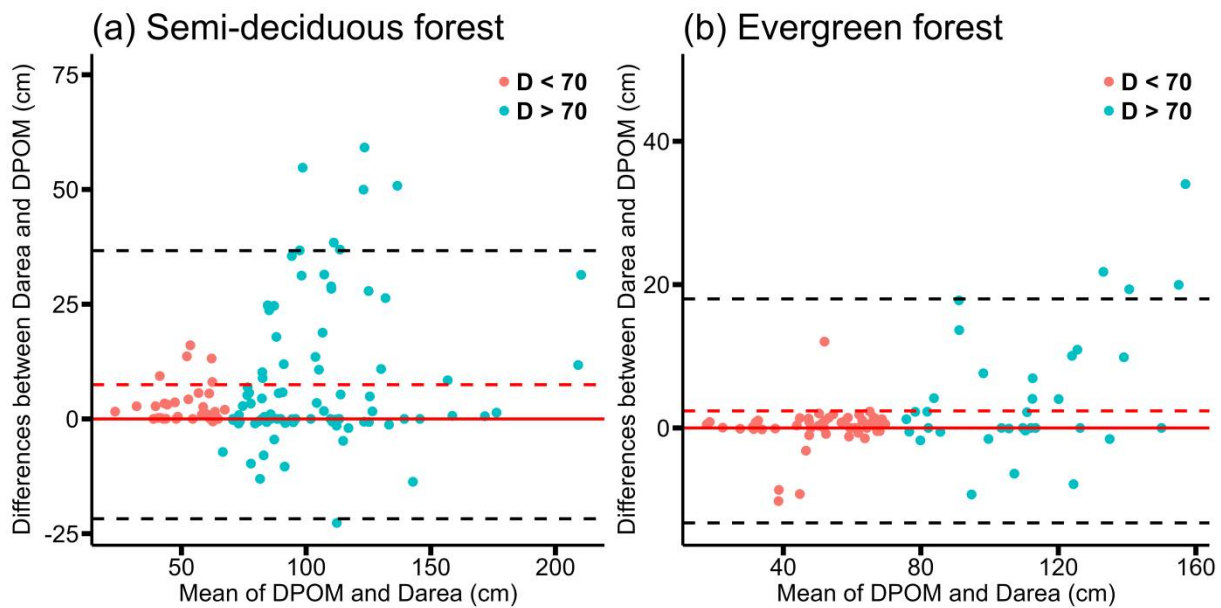


Fig. S4 - Distribution diagram of differences between Darea and DPOM measurements as a function of diameter class sizes in semi-deciduous and evergreen forests. The Shapiro-Wilk test for normal distribution accepted normality ($P < 0.001$).

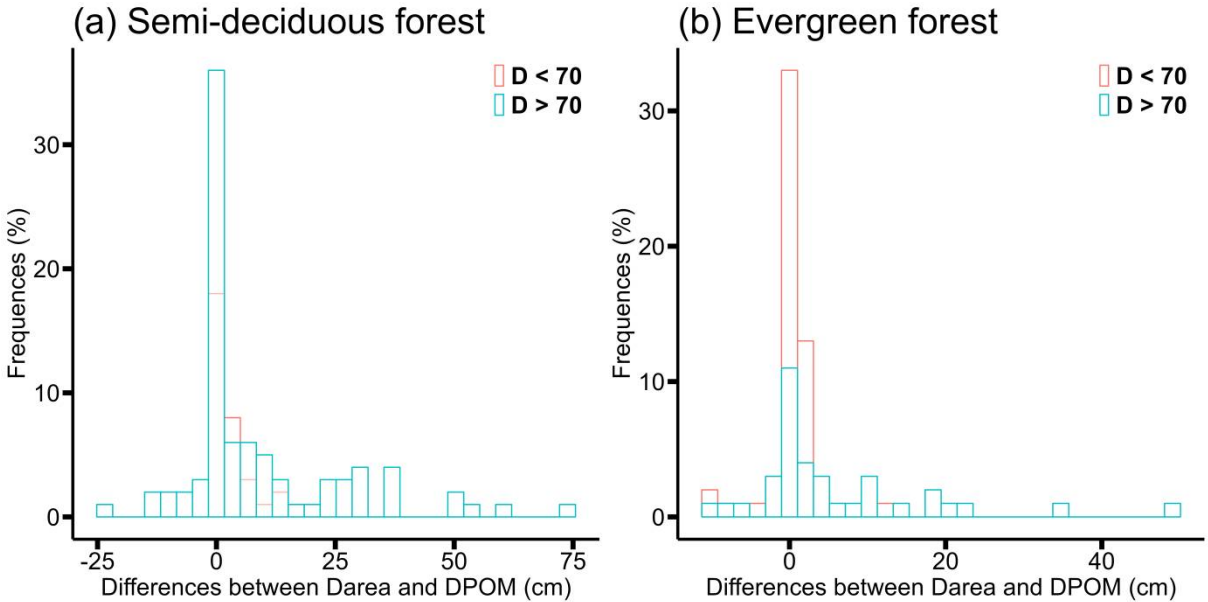


Fig. S5 - Results of heteroskedasticity tests in the Darea using the Breusch-Pagan test, taking as a reference DPOM in semi-deciduous and evergreen forest.

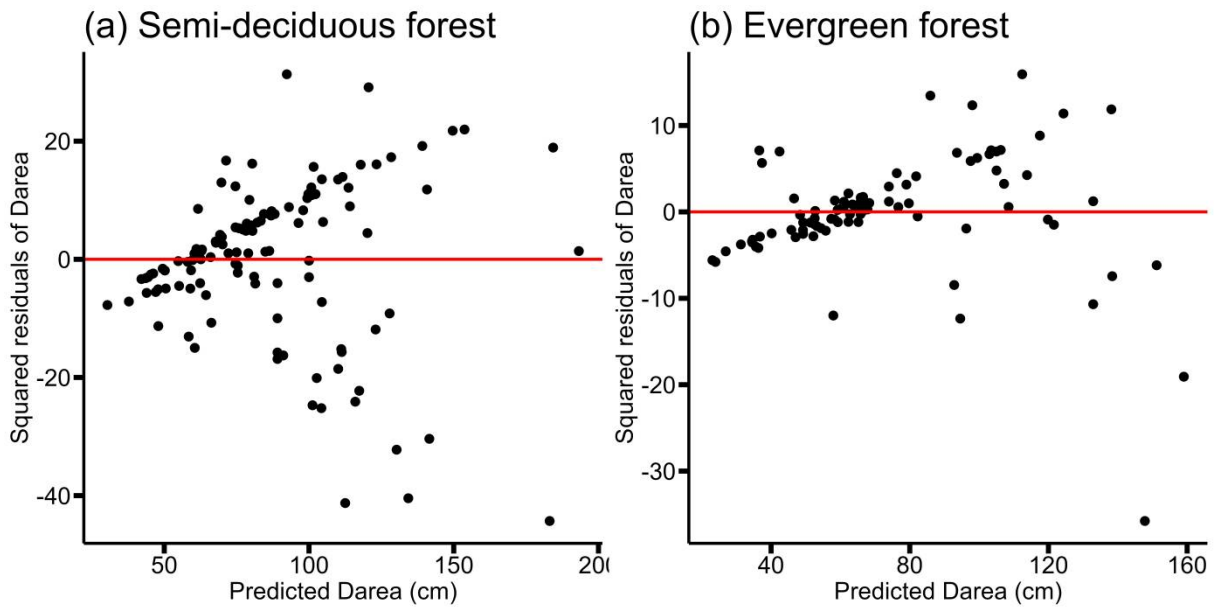
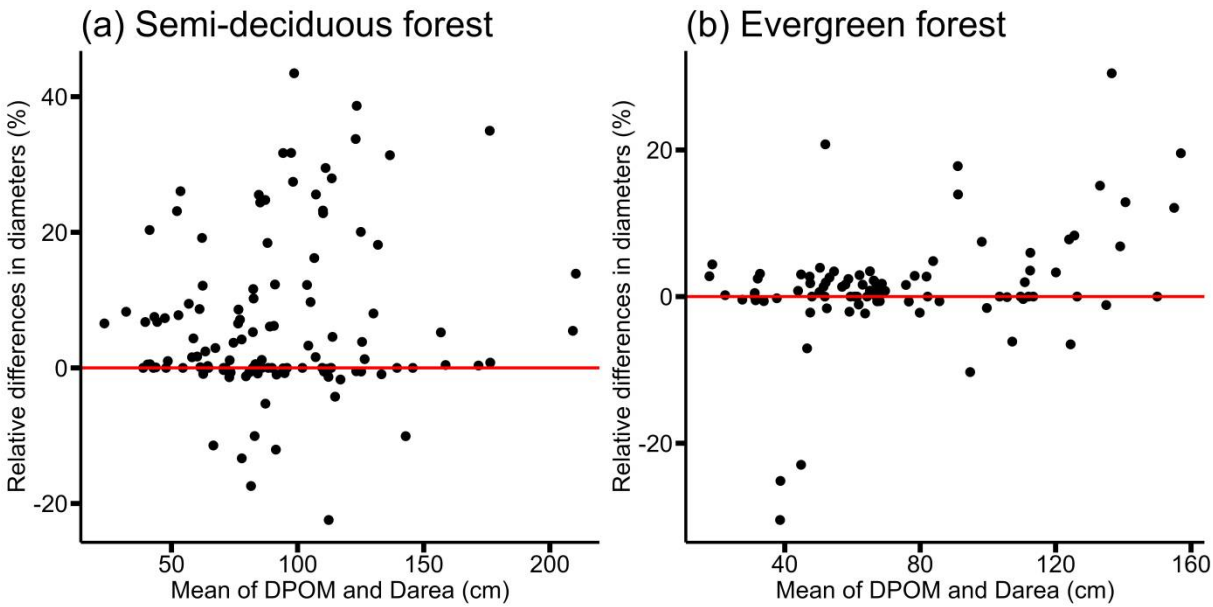


Fig. S6 - Distribution of percentual errors (differences) in Darea taking as a reference DPOM.



Tab. S1 - Characteristics of the species studied including scientific names, family, and sampling effort (n, number of trees sampled, and diameter range).

Scientific name	Family	n [diameter range in cm]	
		Semi-F	Ever-F
<i>Antiaris toxicaria</i> Lesch	Moraceae	5[93.5 – 162]	-
<i>Triplochiton scleroxylon</i> K. Schum.	Malvaceae	8[108 – 226]	-
<i>Alstonia boonei</i> De Wild.	Apocynaceae	9[33.4 – 116]	-
<i>Piptadeniastrum africanum</i> (Hook. f.) Brenan	Fabaceae	38[31.3 – 266]	-
<i>Chrysophyllum lacourtianum</i> De Wild.	Sapotaceae	-	5[19 – 94]
<i>Staudtia kamerunensis</i> Warb.	Myristicaceae	-	47[10.9 – 85.4]
<i>Celtis mildbraedii</i> Engl.	Cannabaceae	19[41 – 153]	-
<i>Manilkara mabokeensis</i> Aubrev.	Sapotaceae	28[42.6 – 113]	-
<i>Pterocarpus soyauxii</i> Taub.	Fabaceae	27[24.2 – 158]	15[27 – 139]
<i>Entandrophragma cylindricum</i> (Sprague) Sprague	Meliaceae	29[58.5 – 215]	42[10.5 – 174]
<i>Erythrophleum suaveolens</i> Brenan	Fabaceae	18[54.4 – 142]	17[22.4 – 109]

Tab. S2 - Normality check and distribution of the data. Results of normality check by Shapiro-Wilk and d’Agostino-Pearson tests. With Δ DPOM-Darea, absolute difference between the diameter obtained above irregularities using the conventional dendrometric approach (DPOM) and the close-range photogrammetric approach (Darea).

Test	Sites	Statistic	DPOM	Darea	Δ POM-Darea
Shapiro-Wilk	Semi-deciduous forest	W	0.95126	0.95496	0.76528
		P-value	<0.001	<0.001	<0.001
		α	0.05	0.05	0.05
		Diagnose	No	No	No
	Evergreen forest	W	0.93902	0.9474	0.63838
		P-value	<0.001	<0.001	<0.001
		α	0.05	0.05	0.05
		Diagnose	No	No	No
Agostino-Pearson	Semi-deciduous forest	DA	0.89068	0.86982	1.9121
		P-value	<0.001	<0.001	<0.001
		α	0.05	0.05	0.05
		Diagnose	No	No	No
	Evergreen forest	DA	0.73306	0.51233	3.0856
		P-value	<0.001	<0.05	<0.001
		α	0.05	0.05	0.05
		Diagnose	No	No	No

Tab. S3 - Pearson's correlation coefficient (r), Kendall's correlation coefficient (ρ), Spearman's correlation coefficient (τ) for all data and as a function of diameter class size.

Sites	Diameter type	All data			D < 70 cm			D > 70 cm		
		r	ρ	τ	r	ρ	τ	r	ρ	τ
Semi-deciduous forest	Darea _{vs} DPOM	0.92	0.79	0.91	0.92	0.75	0.90	0.85	0.63	0.79
Evergreen forest	Darea _{vs} DPOM	0.98	0.94	0.99	0.98	0.92	0.98	0.90	0.92	0.98

Tab. S4 - Main statistics of simple linear regression on all data and as a function of diameter class size.

Forest Type	Model	Intercept	DPOM	R ²
Semi-deciduous forest	All data	0.10826**	0.80704***	0.84
	D < 70 cm	0.01913 ^{n.s}	0.90691***	0.85
	D > 70 cm	0.20440***	0.73214***	0.71
Evergreen forest	All data	0.07401***	0.87156***	0.96
	D < 70 cm	0.02705 ^{n.s}	0.94618***	0.96
	D > 70 cm	0.26256***	0.71717***	0.81