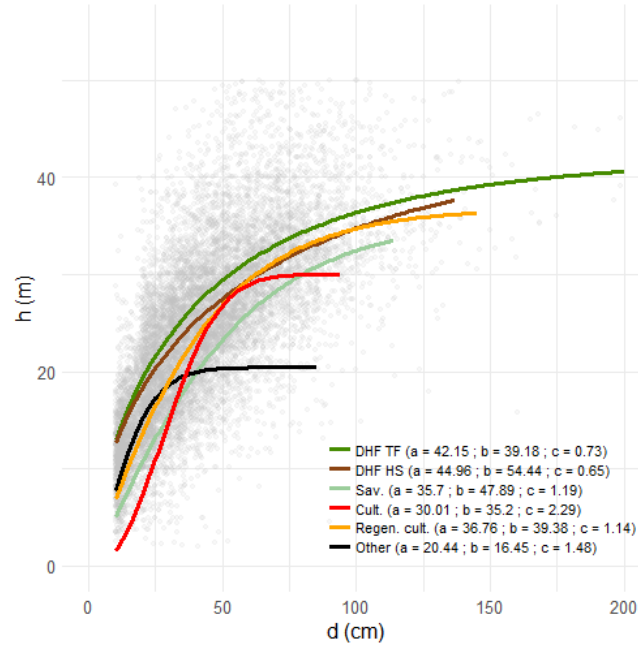
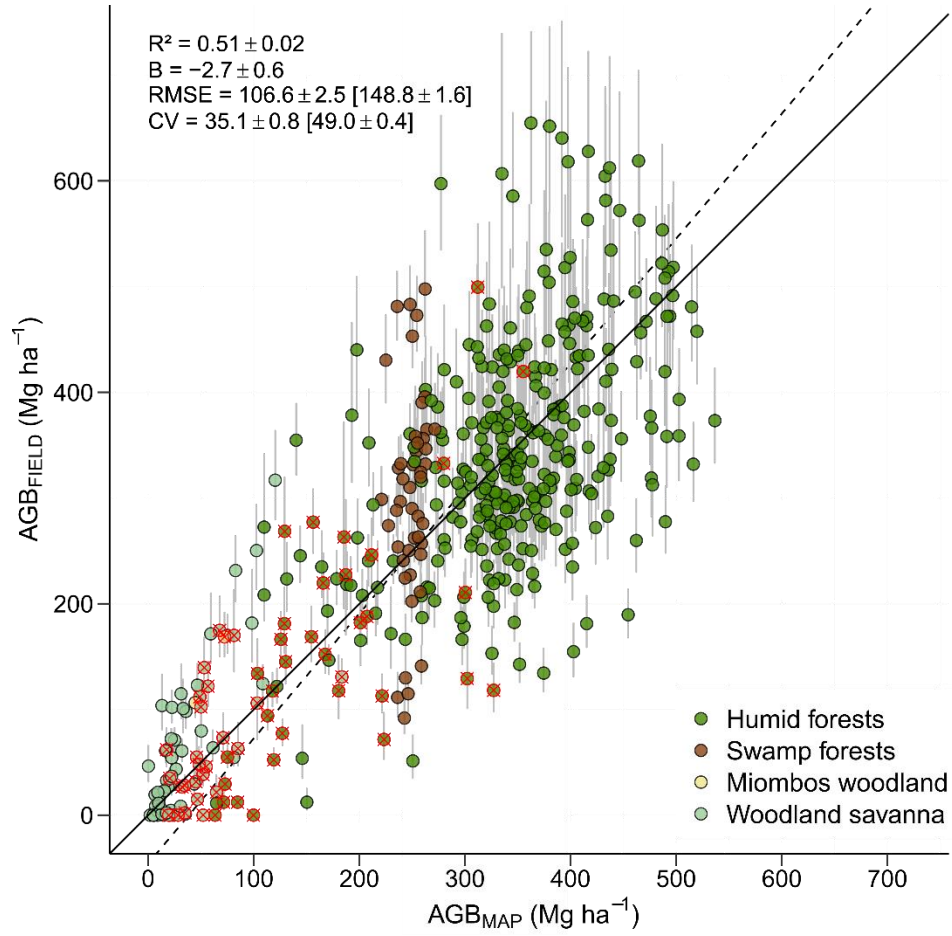


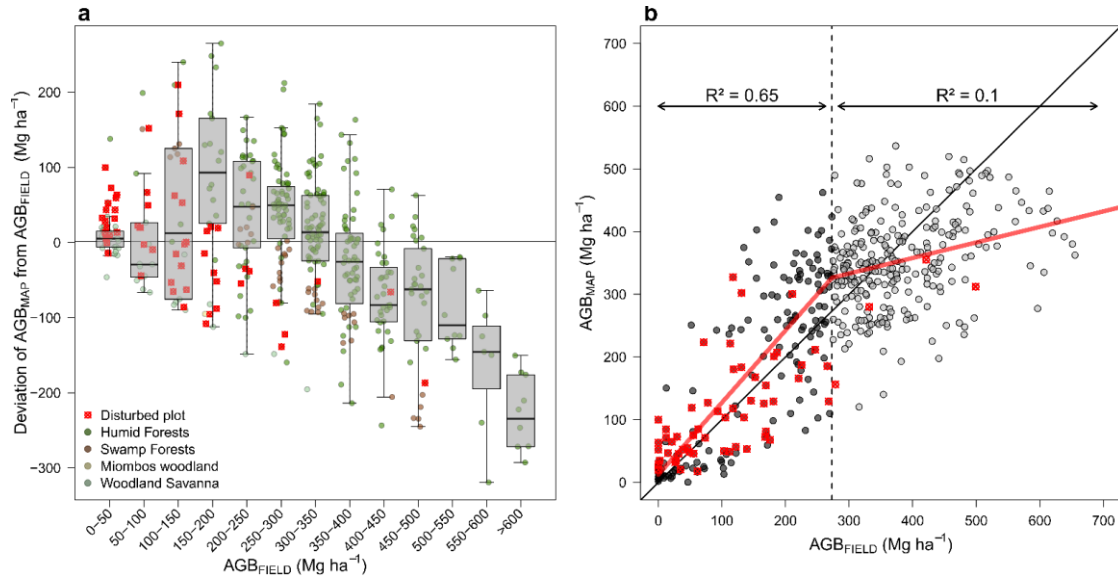
## SUPPLEMENTARY FIGURES



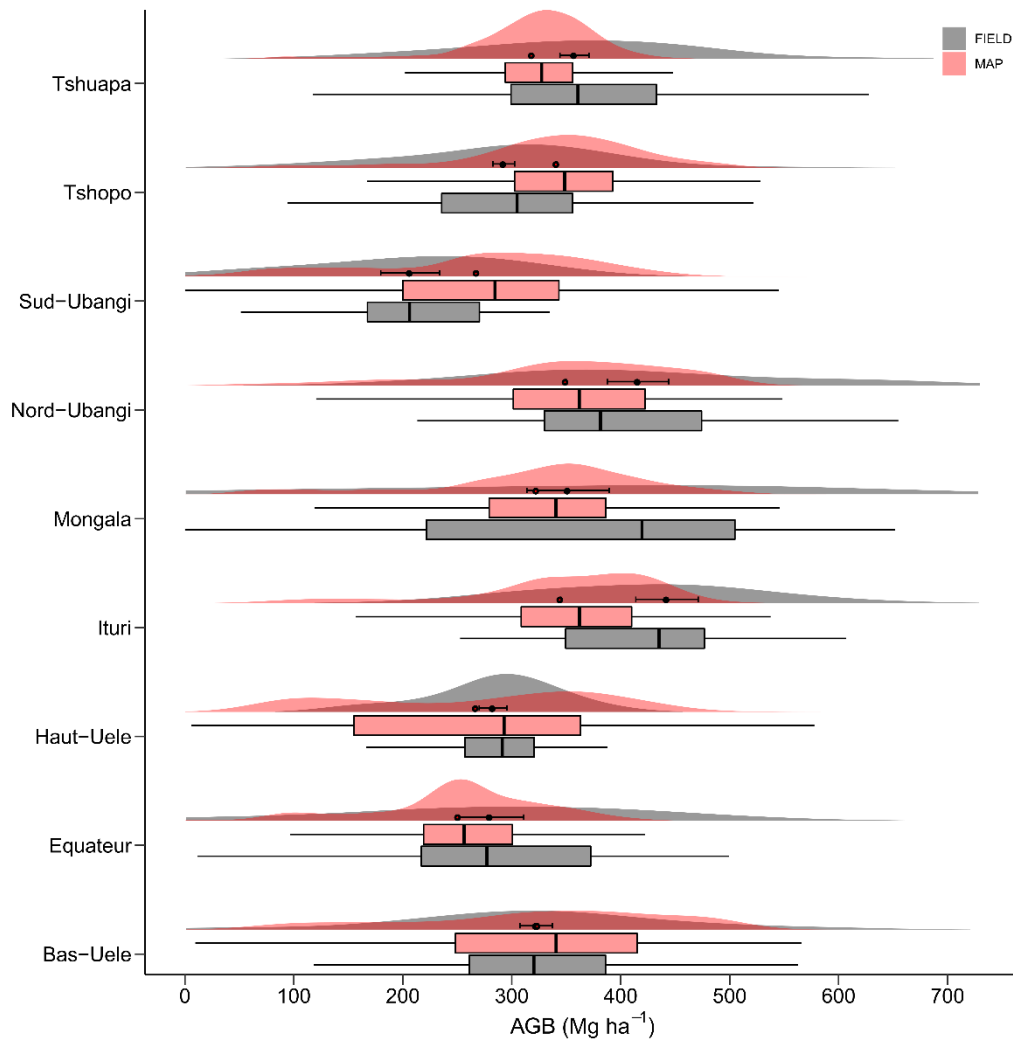
**Figure S1.** Regional h:d models per landcover stratum derived from NFI data (DHF TF: dense humid forest terra firme; DHF HS: dense humid forest on hydromorphic soil ; Sav.: savanna ; Cult.: culture ; Regen. cult.; regeneration on abandoned crop; Other : other landcover type). Parameters of the three-parameter Weibull model ( $h = a \times \left(1 - \exp\left(\frac{-d^c}{b}\right)\right)$ , with h and d the tree height and the trunk diameter, respectively) are provided between brackets.



**Figure S2.** Scatterplot of sample plots aboveground biomass derived from inventory data (AGB<sub>FIELD</sub>) and vs the biomass map (AGB<sub>MAP</sub>). AGB<sub>FIELD</sub> estimates are bounded by their 95% confidence interval (grey segments). The dash line represents the fit of a major axis regression. For information, disturbed plots are highlighted by red crossed circles, but these plots were not used when computing map performance statistics and fitting the major axis regression model.



**Figure S3. a.,** Breakdown of mapping error by classes of aboveground biomass derived from inventory data ( $AGB_{FIELD}$ ). **b.,** Breakpoint in the relationship between sample plots aboveground biomass derived from the biomass map ( $AGB_{MAP}$ ) and  $AGB_{FIELD}$ . The red line represents the fit of a piecewise regression. The dashed vertical line highlights the location of the breakpoint. For information, disturbed plots in **a** and **b** are highlighted by red crossed circles, but are not used when generating boxes (**a**) or fitting the piecewise regression (**b**).



**Figure S4.** Provincial distributions of aboveground biomass (AGB) in field sample plots (red) and in the map (dark grey) for the Humid forests class. Distribution means are represented with thick circles (bounded by  $\pm$  one s.e.).

## SUPPLEMENTARY TABLES

**Table S1.** Biophysical parameters of forest samples plots from the National Forest Inventory. N stands for the number of trees (in trees ha<sup>-1</sup>), G for plot's basal area (in m<sup>2</sup> ha<sup>-1</sup>), Dg for the quadratic mean tree diameter (in cm), WDp for the basal area-weighted wood density (in g cm<sup>-3</sup>), H<sub>98</sub> for the 98<sup>th</sup> quantile of tree predicted height (in m) and AGB for the aboveground biomass (in Mg ha<sup>-1</sup>).

Parameter	Mean	SD
N	354.01	169.26
G	20.04	9.00
Dg	27.86	8.39
WDp	0.61	0.08
H <sub>98</sub>	32.10	6.95
AGB	280.59	153.93

**Table S2.** Relationships between field- and map-derived plots aboveground biomass by land cover class. Disturbed plots were removed from the analysis. N, R<sup>2</sup>, B, RMSE and CV stand for the number of plots, the squared correlation, the average error, the root mean squared error and the coefficient of variation, respectively.

Landcover	N	R <sup>2</sup>	B	RMSE	CV
Woodland Savanna	52	0.58 ± 0.09	-45.0 ± 3.3	56.7 ± 4.1	104.9 ± 6.8
Swamp Forests	46	0.02 ± 0.03	-17.5 ± 1.3	113.1 ± 4.3	37.4 ± 1.3
Humid Forests	311	0.20 ± 0.02	0.5 ± 0.7	111.9 ± 3.1	32.3 ± 0.9

**Table S3.** Mean biomass estimation (in Mg ha<sup>-1</sup>) by stratum using field sample plots (including “disturbed” plots) and the biomass map. N and CI stand for the number of plots and the confidence interval, respectively.

Stratum	FIELD			MAP
	N	AGB	95% CI	AGB
Study area	470	280.6	252.2 – 309.0	252.7

Woodland Savanna	77	57.3	39.8 – 74.9	31.8
Swamp Forests	46	302.7	251.6 – 353.7	247.8
Humid Forests	344	328.8	305.4 – 352.2	319.7
Nord-Ubangi	32	266.3	117.3 – 415.2	198.2
Bas-Uele	77	294.5	244.0 – 345.0	246.8
Sud-Ubangi	28	122.4	65.9 – 178.8	159.3
Haut-Uele	32	214.1	146.6 – 281.6	143.2
Ituri	36	297.9	153.4 – 442.4	234.9
Mongala	36	300.9	181.9 – 419.8	256.8
Equateur	58	289.1	243.4 – 334.7	239.5
Tshopo	97	278.5	238.9 – 318.0	322.7
Tshuapa	74	338.9	287.4 – 390.5	305.5