Supplementary Materials:

Table S1. Coefficients resulting from models for monospecific stands without considering mixing effects (Equation 1), with standard error in parenthesis.

	Ps	Pp	Ph	Pn	Pt
a_0	2.0019 (0.1276)	1.9399 (0.2236)	1.1954 (0.0646)	1.7704 (0.1406)	2.1193 (0.1105)
$\ln(dg_{sp})$	-0.3716 (0.0305)	-0.2332 (0.0422)	-0.2247 (0.0179)	-0.3342 (0.0314)	-0.3679 (0.0263)
ln(Ho)	0.2194 (0.0365)	0.1277 (0.0553)	0.2900 (0.0226)	0.2264 (0.0388)	0.2187 (0.0341)
ln(RD)	0.2384 (0.0189)	0.2020 (0.0281)	0.0983 (0.0117)	0.2484 (0.0204)	0.1805 (0.0161)
ln(M)	0.2533 (0.0295)	0.1990 (0.0633)	0.2452 (0.0193)	0.2614 (0.0353)	0.3191 (0.0270)
Origin	0.1640 (0.0190)	ns	0.0655 (0.0118)	0.1643 (0.0243)	0.1048 (0.0155)

dg_{sp}, is the quadratic mean diameter; Ho, the dominant height; RD, the relative density; and M, Martonne aridity index. The species are: Ps, *Pinus sylvestris;* Pp, *Pinus pinea;* Ph, *Pinus halepensis;* Pn, *Pinus nigra;* Pt, *Pinus pinaster.*

Table S2. Comparison between models with and without mixing effect for all pine species. Equation 1 corresponds to the model which does not consider mixtures and Equation 2 considers the mixing effect.

	R2marg		R2cond		AIC	
	Eq.1	Eq.2	Eq.1	Eq.2	Eq.1	Eq.2
Ps	0.2908	0.2976	0.4105	0.4117	538.9	535.7
Pp	0.1952	0.2196	0.2854	0.2962	-34.0	-41.7
Ph	0.3371	0.3515	0.3714	0.3891	−1127.3	−1180.1
Pn	0.2810	0.2861	0.4874	0.4941	382.0	368.5
Pt	0.3735	0.4027	0.5102	0.5220	-312.1	-343.9

AIC is the Akaike Information Criteria. The species are: Ps, *Pinus sylvestris;* Pp, *Pinus pinea;* Ph, *Pinus halepensis;* Pn, *Pinus nigra;* Pt, *Pinus pinaster*.

Table S3. Variables needed to correct the bias induced by logarithmic transformation (sigma model) and the negative increment of volume (min (VGEsp)).

Sp	Min(VGE_{sp})	Sigma Model
Ps	-3.46	0.2731
Pp	-3.52	0.2247
Ph	-3.40	0.1798
Pn	-2.89	0.2658
Pt	-6.04	0.2073

The species sp are: Ps, *Pinus sylvestris;* Pp, *Pinus pinea;* Ph, *Pinus halepensis;* Pn, *Pinus nigra;* Pt, *Pinus pinaster*.

Table S4. Summary of correlations between the principal variables which are used in the models.

Species	Variables	Ho	dg_{sp}	M	RD
Ps	Ho	1.00	0.72	0.17	0.43
	dg_{sp}	0.72	1.00	0.19	0.11
	M	0.17	0.19	1.00	0.04
	RD	0.43	0.11	0.04	1.00
Pp	Ho	1.00	0.59	0.03	0.35

Species	Variables	Ho	dg_{sp}	M	RD
Ph	dg_{sp}	0.59	1.00	-0.08	0.01
	M	0.03	-0.08	1.00	-0.02
	RD	0.35	0.01	-0.02	1.00
	Ho	1.00	0.51	0.40	0.32
	dg_{sp}	0.51	1.00	0.25	-0.05
	M	0.40	0.25	1.00	-0.04
	RD	0.32	-0.05	-0.04	1.00
Pn	Ho	1.00	0.61	0.31	0.34
	dg_{sp}	0.61	1.00	0.36	-0.03
	M	0.31	0.36	1.00	0.04
	RD	0.34	-0.03	0.04	1.00
Pt	Ho	1.00	0.60	0.30	0.34
	dg_{sp}	0.60	1.00	-0.07	0.07
	M	0.30	-0.07	1.00	0.01
	RD	0.34	0.07	0.01	1.00

The species sp are: Ps, *Pinus sylvestris;* Pp, *Pinus pinea;* Ph, *Pinus halepensis;* Pn, *Pinus nigra;* Pt, *Pinus pinaster*. The variables are: Ho, dominant height; dg_{sp}, quadratic mean diameter of the target species; M, Martonne aridity index; and RD, the relative density.