Supplementary Tables and Figures

Table S1. Climatic values per plot in the northwestern Andean mountains, Colombia. Mean annual temperature-MAT (°C), mean annual precipitation-MAP (mm), temperature seasonality-T.s (°C), precipitation seasonality-Ps (mm), wind speed-Wind (m/s) and solar radiation- S.rad (KJ m^{-1} day^{-1}) were downloaded from the free climate data set Woldclim version 2.1. (1970–2000) with a resolution of 30 arcsec–1 km. Vapor pressure deficit-DVP (KPa) was calculated as the difference between the moisture in the air and the moisture that the air can hold when it is saturated ($DVP = SVP - VAP$), with $SVP = \frac{610.7x10^{7.5T}}{237.3+T}$.

Site	Elev	MAP	MAT	T.s	P.s	VAP	Wind	SRad	VPD
Carepa	58	2518	26	25.79	47.16	2.93	1.71	18,320.58	0.71
Puerto Triunfo	180	2788	27	35.05	41.00	2.87	0.89	17,640.42	0.86
Segovia	717	3803	23.2	33.13	41.44	2.52	1.08	17,852.58	0.55
Porce	1006	2108	21.9	41.97	42.04	2.28	0.97	17,722.67	0.56
Maceo	1016	3014	22.6	40.64	33.46	2.35	0.92	17,739.00	0.61
Anorí	1784	4354	17.5	46.73	43.04	1.81	1.07	17,830.42	0.52
Angelópolis	2118	2197	16.2	33.95	38.27	1.58	0.98	17,488.33	0.41
Jardín	2525	2617	14.6	20.49	35.89	1.45	0.96	17,354.17	0.21
Belmira	2885	2203	11.9	32.97	48.35	1.20	1.17	17,624.08	0.26

Table S2. Soil values per plot in the northwestern Andean mountains, Colombia. pH: measured potentiometric method in a ratio of 1 to 2, MO: organic matter measured combustion method (%), Ca (calcium), Mg (magnesium), and K (potassium) cations were determined by atomic absorption spectrophotometry using neutral and 1N ammonium acetate (meq per 100 g soil), P: phosphorus determined by ultraviolet-visible spectrophotometry (ppm), probability of association per place with EcM (ectomycorrhizas), AM (arbuscular mycorrhizas), and Nfix (nitrogen-fixing bacteria).

Site	Elev	pH	MO	P	Ca	Mg	K	EcM	AM	Nfix
Carepa	58	5.78	7.7	0.87	11.28	7.39	0.22	0.02	0.49	0.04
Puerto Triunfo	180	6.058	8.4737	35.32	5.18	6.08	0.13	0.06	0.58	0.13
Segovia	717	3.94	6.65	1.08	0.32	0.116	0.0764	0	0.73	0.06
Porce	1006	4.18	4.52	4.28	0.116	0.132	0.0848	00	0.78	0.04
Maceo	1016	3.562	5.424	1.67	0.42	0.17	0.238	0.01	0.66	0.02
Anorí	1784	3.87	4.33	5.52	0.291	0.104	0.172	0.04	0.81	0.04
Angelópolis	2118	4.74	23.3	14.1	9.29	1.52	0.258	0.02	0.72	0
Jardín	2525	4.781	12.199	4.8	0.312	0.127	0.185	0	0.78	0
Belmira	2885	3.57	28.5	4.38	0.142	0.109	0.145	0.25	0.72	0.02

Table S3. Community weight mean (CWM) of the six traits. LA: leaf area (mm^2), SLA: specific leaf area (mm^2 mg^{-1}), LDMC: leaf dry matter content (mg g^{-1}), LT: thickness (mm), Lth: toughness (N mm), and WD: wood density (g cm^{-3}).

Site	LA	SLA	LDMC	LT	Lth	WD
Carepa (58 masl)	30,008.55	19.87	339.48	0.19	0.24	0.50
Puerto Triunfo (180 masl)	19,362.02	12.83	447.25	0.20	0.35	0.68
Segovia (717 masl)	24,318.90	15.06	344.39	0.22	0.28	0.59
Porce (1006 masl)	32,310.38	12.38	409.48	0.24	0.32	0.57
Maceo (1016 masl)	16,608.01	16.94	352.91	0.25	0.27	0.59
Anorí (1784 masl)	14,764.42	11.52	365.61	0.28	0.33	0.57
Angelópolis (2188 masl)	12,786.70	13.61	344.09	0.28	0.33	0.54
Jardín (2525 masl)	16,292.80	12.16	329.63	0.31	0.28	0.49
Belmira (2855 masl)	9292.93	10.10	359.29	0.34	0.41	0.52

Figure S1. Sample plot design diagram. The arrows indicate the sequence followed for the individual numbering within the 20 × 20 quadrants and through each 20 × 100 strip. The box with the thickest line corresponds to the subplot of 40 × 40 m (0.16 ha), where the 1 cm individuals were included. Blue points show soil samples inside a 20m × 20 m quadrant.

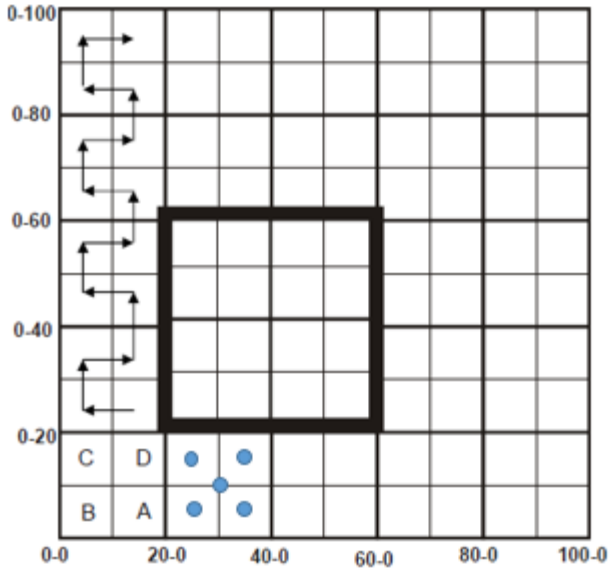


Figure S2. Correlation between elevation and environmental variables. (**a**) Climate: MAT: mean annual temperature (°C), MAP: mean annual precipitation (mm), T.s: temperature seasonality (°C), P.s: precipitation seasonality (mm), VAP: water vapor pressure (KPa), Wind: wind speed (m/s), SRad: solar radiation (KJ m^{-1} day^{-1}), DVP: vapor pressure deficit (KPa). (**b**) soil and symbiotic association: MO: organic matter (%), Ca (calcium), Mg (magnesium), and K (potassium) cations (meq per 100 g soil), P: phosphorus (ppm), probability of association per place with EcM (ectomycorrhizas), AM (arbuscular mycorrhizas), and Nfix (nitrogen-fixing bacteria).

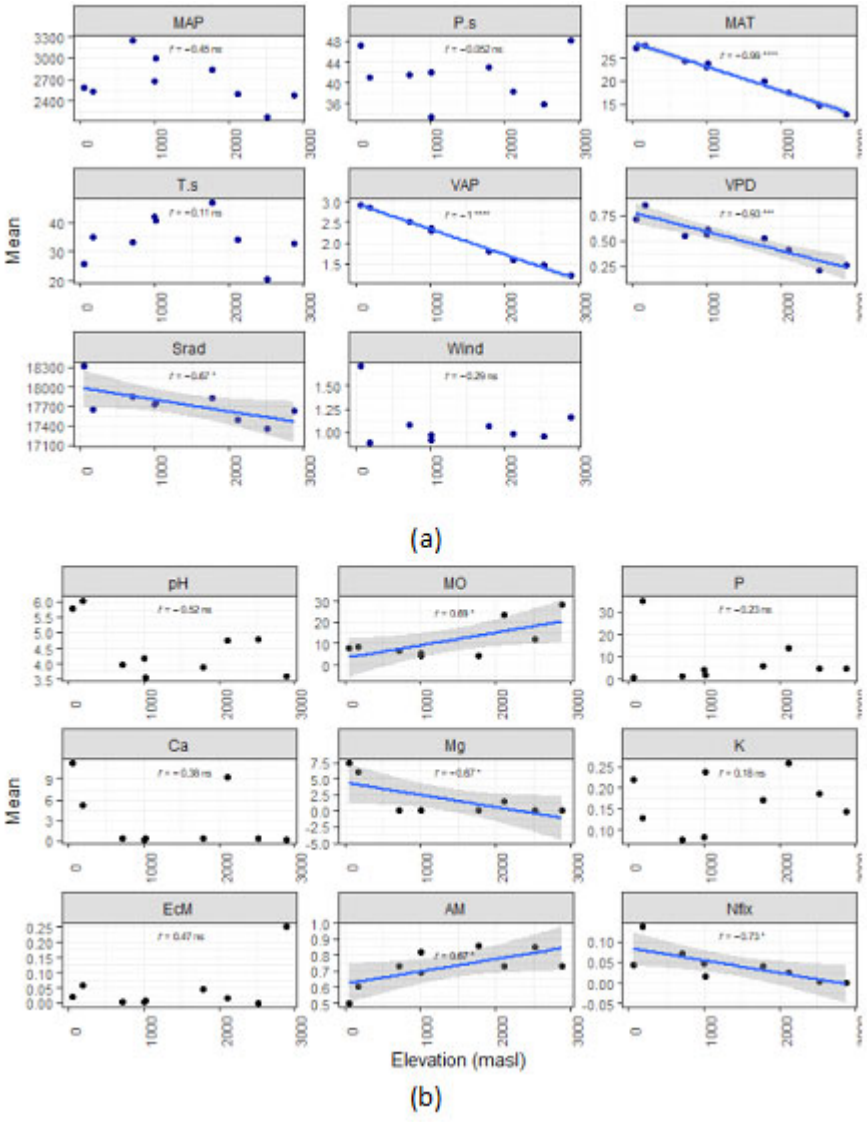
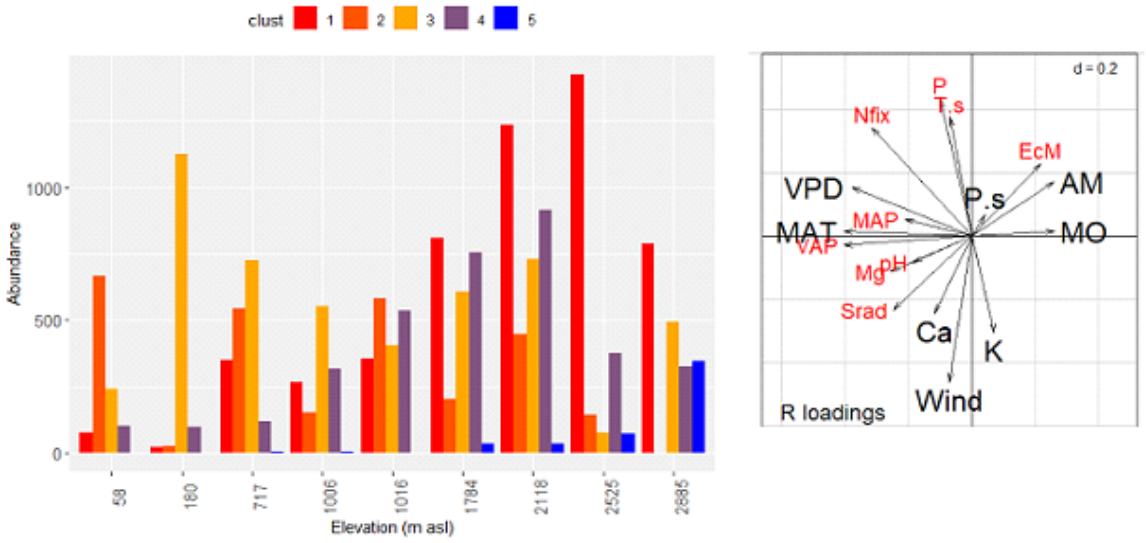


Figure S3. Distribution of the functional group abundance along elevational gradient (**a**) and plot of the first two RLQ axes with environmental variables (**b**). MAT: mean annual temperature (°C), MAP: mean annual precipitation (mm), T.s: temperature seasonality (°C), P.s: precipitation seasonality (mm), VAP: water vapor pressure (KPa), Wind: wind speed (m/s), SRad: Solar radiation (KJ m^{-1} day^{-1}), DVP: Vapor pressure deficit (KPa). MO: organic matter (%), Ca (calcium), Mg (magnesium), and K (potassium) cations (meq per 100 g soil), P: phosphorus (ppm), probability of association per place with EcM (ectomycorrhizas), AM (arbuscular mycorrhizas), and Nfix (nitrogen-fixing bacteria).



(a) (b)

Plot Establishment and Trait Sampling

Plot Establishment

The nine one-hectare plots were randomly located, seeking to cover the elevation gradient without assuming any prior criteria in terms of their floristic composition, structure, climate, or soils. For this, we selected protected forest fragments to ensure no disturbance and permanence over time. Once the site was identified, a point was randomly selected within the forest, at least 100 m away from the forest edge.

The plots were georeferenced based on the starting corner. The establishment and delimitation were performed using a Warrent Knight level compass, clinometer, or digital hypsometer, poles, and measuring tape to form a network of 10 × 10 meter subplots (100 subplots), delimited by PVC tubes at the vertices marked according to the Cartesian coordinate system. The azimuth, direction, of the two perpendicular lines was recorded for each plot. The plot was made up of five strips of 20 × 100, each of which contained five quadrants of 20 × 20, which were numbered according to the coordinate of the lower left vertex. Hence, the first quadrant of the first strip was labelled the 0–0 quadrant, the second 0–20, quadrant 25 was denoted as 80–80, and so forth.

Trait measurement

The measurement of functional traits was conducted following the methodology proposed in the "New handbook for standardized measurement of plant functional traits worldwide" [1]. We took samples from understory species as well as canopy species, sampling the less-shaded branch. Fresh weight, thickness, and toughness were measured immediately. Then, the collected leaves were wrapped, moistened, and hermetically packed to avoid dehydration to complete the trait measurement in the laboratory of Biodiversity of the National University of Colombia.

We used the software ImageJ (http://rsbweb.nih.gov/ij/28 01 2015 -15 07 2019) to quantify the leaf area (LA) with the petiole. Leaf thickness (LT) was measured with a digital micrometer (Mitutoyo, precision 0.0001 mm), and leaf toughness (Lth) was measured using a Pesola Medio-Line Pressure Set adopted to Spring Scales (300, 600, and 1200 g of capacity, rod diameter 3.16 mm). LT and Lth were measured three times per leaf using fresh leaves and avoiding leaf veins. To calculate the leaf dry matter content (LDMC), each sampled leaf was placed in a separate paper bag and dried in the oven for 72 hours (60 °C), to later be weighed in an analytical balance with a precision of 0.0001 g. Subsequently, we estimated the specific leaf area (SLA) as the ratio between LA and LDMC. Wood density (WD) was measured for mature canopy trees using samples from branches. The bark was removed from each sample and rehydrated for 24 hours, and the volume was then estimated through water displacement. Samples were then placed in the oven at 70°C until a constant weight was achieved to measure dry weight.

1. Perez-Harguindeguy, N.; Díaz, S.; Garnier, E.; Lavorel, S.; Poorter, H.; Jaureguiberry, P.; Cornwell, W.K.; Craine, J.M.; Gurvich, D.E.; Urcelay, C.; et al. New handbook for standardised measurement of plant functional traits worldwide. *Aust. J. Bot.* **2016**, *64*, 715–716.