Supplementary Material

Plant above-ground biomass and litter quality drive soil microbial metabolic limitations during vegetation restoration of subtropical forests

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Table S1 General characteristics of the vegetation restoration gradient.

Vegetation community	Restoration year	Elevation (m)	Slope (°)
Shrub-grasslands (R7)	7-8	120-131	18-20
Shrub lands(R14)	14-16	120-135	18-22
Coniferous-broadleaved mixed forests (R49)	49-50	135-160	18-20
Evergreen and deciduous broadleaved mixed forests (R70)	~70	85-99	22-25
Nearly climax evergreen broadleaved forests (UF)	Stand age > 90	200-260	20-22

Table S2 Description of the extracellular enzymes included in this study.

Enzyme type	Abbre.	EC	Enzyme substrate
β-1,4-glucosidase	BG	3.2.1.21	200 $\mu molL^{-1}$4-MUB-β-D-glucopyranoside
Cellobiohydrolase	CBH	3.2.1.91	200 $\mu molL^{-1}$4-MUB-β-D-cellobioside
β-1,4-N-acetyl-glucosaminidase	NAG	3.4.11.1	200 $\mu molL^{-1}$4-MUB-N-acetyl-β-D-glucosaminide
acid phosphatase	AP	3.1.3.2	200 $\mu molL^{-1}$4-MUB-phosphate

Note: EC, enzyme commission; 3-MUB, 4-MUB: 4-methylumbelliferyl.

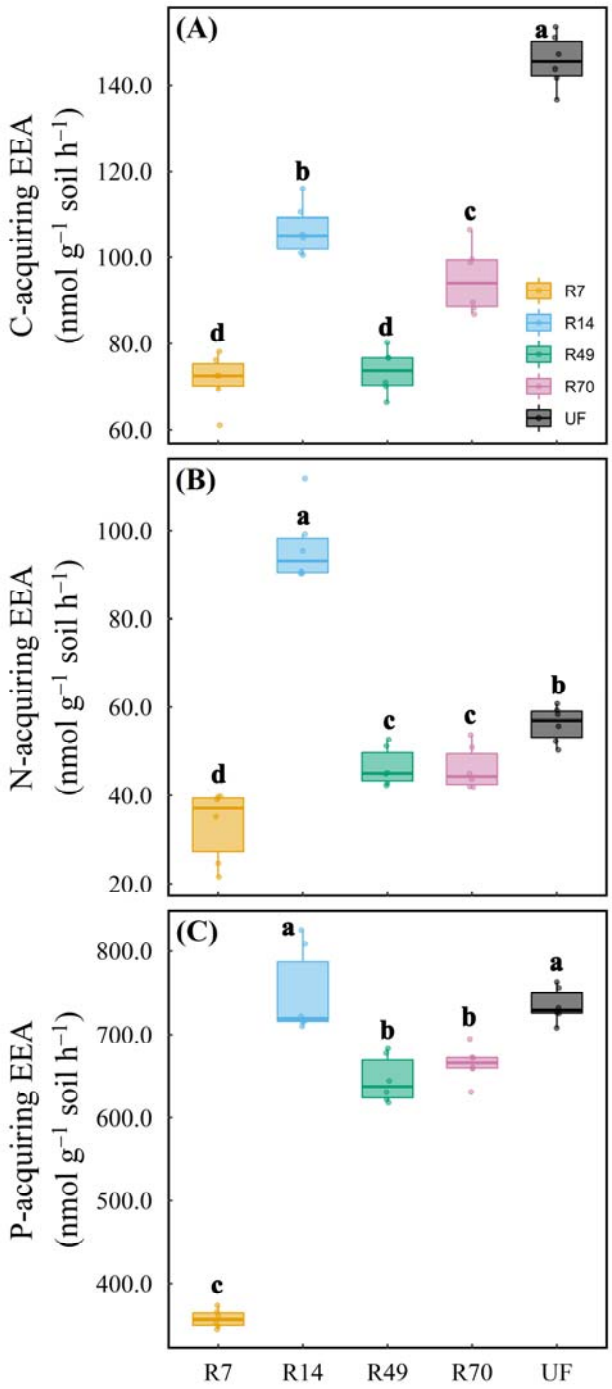

Fig. S1 Soil extracellular enzyme activities (EEA) along vegetation restoration gradients. Each box represents the interquartile range, whiskers represent the minimum value or 1.5 × the interquartile range, and each horizontal line provides the median value. Each point represents an individual sample. Different letters indicate a significant difference (Tukey's HSD, $P < 0.05$) between the five restoration stages.

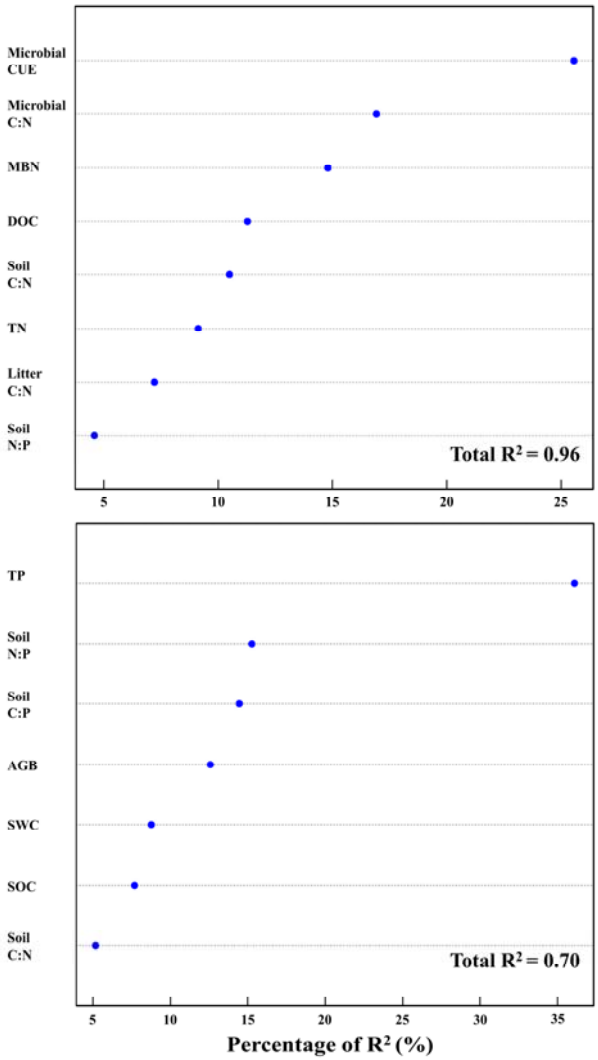

Fig. S2 The relative importance of the selected variables for the variation of soil metabolic limitations. Abbreviations: AGB, above-ground biomass; SOC, soil organic carbon; TP, soil total phosphorus; MBN, soil microbial biomass nitrogen; DOC, dissolved organic carbon; SWC, soil water content.