

## Supplementary Materials

**Table S1.** Basic messages of forests with different logging intensities (mean  $\pm$  SD). Differences in variables were compared with Tukey–Kramer HSD test ( $p < 0.05$ ).

| Logging intensity        | Elevation (m)  | Slope (°)        | Soil type             | Bulk Density (g/cm <sup>3</sup> ) | SOC (g/kg)      | SN (g/kg)      | SCN (/)         | SWC (g/kg)       | MWC (mm)          | CWC (mm)          |
|--------------------------|----------------|------------------|-----------------------|-----------------------------------|-----------------|----------------|-----------------|------------------|-------------------|-------------------|
| Old-growth forest        | 894 $\pm$ 140a | 23.7 $\pm$ 10.3a | lateritic yellow soil | 1.12 $\pm$ 0.17a                  | 17 $\pm$ 6.1a   | 1.2 $\pm$ 0.3a | 13.8 $\pm$ 3.5a | 82.3 $\pm$ 16.6a | 153.5 $\pm$ 13.2a | 111.9 $\pm$ 12.5a |
| Selective logging forest | 899 $\pm$ 104a | 25.9 $\pm$ 9.6a  | lateritic yellow soil | 1.16 $\pm$ 0.12ab                 | 16.5 $\pm$ 5.3a | 1.3 $\pm$ 0.4a | 12.9 $\pm$ 3.6a | 84.1 $\pm$ 17.8a | 153.3 $\pm$ 14.9a | 113.4 $\pm$ 16a   |
| Clear cutting forest     | 856 $\pm$ 89a  | 19.7 $\pm$ 6.4a  | lateritic yellow soil | 1.24 $\pm$ 0.08b                  | 13.2 $\pm$ 4.3a | 1.1 $\pm$ 0.2a | 11.9 $\pm$ 4.3a | 82.3 $\pm$ 17.6a | 148.1 $\pm$ 10.5a | 115.6 $\pm$ 11.9a |

*Table S2–S6. Variables Selection by Correlation Analyses*

Correlation analyses were carried out to choose the most independent variables at each level of organization. For soil physical properties variables (Table S2), SWC was highly correlated with CWC ( $r = 0.81$ ,  $p < 0.001$ ), MWC ( $r = 0.63$ ,  $p < 0.001$ ) and BD ( $r = -0.31$ ,  $p < 0.001$ ). For soil chemical properties variables (Table S3), SOC was highly correlated with SN ( $r = 0.71$ ,  $p < 0.001$ ) and moderately correlated with SCN ( $r = 0.43$ ,  $P < 0.001$ ). For plant functional trait variables in saplings (Table S4), CWM\_SLA was always highly correlated with CWM\_LDMC ( $r = -0.84$ ,  $p < 0.001$ ), CWM\_LT ( $r = -0.83$ ,  $p < 0.001$ ) and CWM\_CC ( $r = -0.82$ ,  $p < 0.001$ ). For plant functional trait variables in treelets (Table S5), CWM\_SLA was always highly correlated with CWM\_LDMC ( $r = -0.53$ ,  $p < 0.001$ ), CWM\_LT ( $r = -0.44$ ,  $p < 0.001$ ) and CWM\_CC ( $r = -0.45$ ,  $p < 0.001$ ). For plant functional trait variables in adult trees (Table S6), CWM\_SLA was always highly correlated with CWM\_LDMC ( $r = -0.70$ ,  $p < 0.001$ ), CWM\_LT ( $r = -0.49$ ,  $p < 0.001$ ) and CWM\_CC ( $r = -0.30$ ,  $p < 0.05$ ).

**Table S2.** Correlations among soil physical properties parameters. All below tables presents correlation coefficients associated with a Pearson’s correlation test for the 73 plots. \*\*\* indicates  $p < 0.001$ , \*\* indicates  $0.001 < p < 0.01$ , \* indicates  $0.01 < p < 0.05$ , ns indicates  $p > 0.05$ .

|     | SWC      | CWC     | MWC      |
|-----|----------|---------|----------|
| CWC | 0.81***  |         |          |
| MWC | 0.63***  | 0.63*** |          |
| BD  | -0.31*** | -0.12** | -0.50*** |

**Table S3.** Correlations among soil chemical properties parameters.

|     | SOC     | SN     |
|-----|---------|--------|
| SN  | 0.71*** |        |
| SCN | 0.43*** | -0.27* |

**Table S4.** Correlations among community functional trait parameters for saplings.

|           | CWM_SLA5 | CWM_LDMC5 | CWM_LT5 |
|-----------|----------|-----------|---------|
| CWM_LDMC5 | -0.84*** |           |         |
| CWM_LT5   | -0.83*** | 0.49***   |         |
| CWM_CC5   | -0.82*** | 0.68***   | 0.77*** |

**Table S5.** Correlations among community functional trait parameters for treelets.

|            | <b>CWM_SLA10</b> | <b>CWM_LDMC10</b> | <b>CWM_LT10</b> |
|------------|------------------|-------------------|-----------------|
| CWM_LDMC10 | −0.53***         |                   |                 |
| CWM_LT10   | −0.44***         | 0.19 ns           |                 |
| CWM_CC10   | −0.45***         | 0.16ns            | 0.45***         |

**Table S6.** Correlations among community functional trait parameters for adult trees.

|            | <b>CWM_SLA15</b> | <b>CWM_LDMC15</b> | <b>CWM_LT15</b> |
|------------|------------------|-------------------|-----------------|
| CWM_LDMC15 | −0.70***         |                   |                 |
| CWM_LT15   | −0.49***         | 0.15 ns           |                 |
| CWM_CC15   | −0.30*           | 0.03ns            | 0.53***         |