**AGB report: {{date}}**



Under Creative Commons CC-BY-NC-SA 4.0 license. <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Please quote the associated report[[1]](#footnote-1) if reusing this report template or results.

***AGB****: above-ground biomass, counting only trees longer than 1.30 meter and having a DBH (diameter at breast height) thicker than 10 centimeters. Check for the precautions of use in the associated report[[2]](#footnote-2) and GitHub repository[[3]](#footnote-3).*

***QSM****: quantitative structure modelling, tree reconstruction processing by performing for vertical slices randomized Hough transformation (ellipse fitting) to rebuild the tree as a stack of cylinders.*

Location of the starting point: {{location}}

Subplot(s): {{subplot}}

Area of the analyzed region of interest: {{x}} by {{y}} meters ({{surface}} m2)

Species of tree: *{{species}}*

Number of trees within the subplot(s): {{real\_trees}}

Number of trees detected by the model after co-registration: {{model\_trees}} ({{percentage}} %)

Number of trees ready for QSM after removal of too small trees: {{before\_QSM\_trees}} ({{percentage1}} %)

Number of trees having successfully passed QSM: {{final\_trees}} ({{percentage2}} %)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (by tree) | Estimated DBH (cm) | Measured DBH (cm) | Estimated total height (m) | Measured living height (m) |
| Average | {{DBH}} | {{mDBH}} | {{h}} | {{mh}} |
| Standard deviation | {{std\_DBH}} | {{std\_mDBH}} | {{std\_h}} | {{std\_mh}} |
| Maximum | {{max\_DBH}} | {{max\_mDBH}} | {{max\_h}} | {{max\_mh}} |
| Minimum | {{min\_DBH}} | {{min\_mDBH}} | {{min\_h}} | {{min\_mh}} |

Table 1: Measurements accuracy (DBH, height)

Measured living height is approximated from measured living length using its leaning angle. Note that we compare the estimated total height with the actual living height (≠ actual total height).

|  |  |  |  |
| --- | --- | --- | --- |
| (by tree) | Estimated AGB (kg) | AGB from Brown’s equation[[4]](#footnote-4) (kg) | Estimated AGB, surfaced (kg/m2) |
| TOTAL | {{AGB}} | {{eqAGB}} | {{sAGB}} |
| Average | {{av\_AGB}} | {{av\_eqAGB}} | / |
| Standard deviation | {{std\_AGB}} | {{std\_eqAGB}} | / |
| Maximum | {{max\_AGB}} | {{max\_eqAGB}} | / |
| Minimum | {{min\_AGB}} | {{min\_eqAGB}} | / |

Table 2: AGB estimations

1. Chardon T. (2023). *Semi-automatic estimation of the tree biomass using terrestrial LiDAR data* [internship report] [↑](#footnote-ref-1)
2. *Ibid.* [↑](#footnote-ref-2)
3. <https://github.com/Thibalt-C/tree-biomass-estimator/> [↑](#footnote-ref-3)
4. Brown S., Gillespie A., Lugo A. (1989). “Biomass Estimation Methods for Tropical Forests with Applications to Forest Inventory Data”, *Forest Science*, 35, 881-902. [↑](#footnote-ref-4)