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Urban Tree Species Diversity and Related Carbon Contribution: A Case Study of the Legon Botanical Garden (LBG), University of Ghana Main Campus

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Abstract: The present study was e carried out to record tree diversity and estimate their related carbon input at the Legon Botanical Garden. Using non-destructive sampling approach in 1.56-hectare area, biophysical parameters of trees species was carried out and appropriate allometries used to convert these measures to total biomass and potential carbon dioxide values. 146 diverse live tree species belonging to 32 different plant families were inventoried. The Fabaceae constitutes the dominant plant family. A total count of 289 individual trees belonging to 44 genera made up of 51 different species and 16 plant families was enumerated. The average tree height and girth measured ranged between 6.4 to 45.2 m and 0.2 to 3.8 m respectively. Potentially, these wood species contributed a total biomass weighting of 546.2 t ha^{-1} and 273.1 t C ha^{-1} carbon storage with *Ceiba pentandra, Gliricidia sepium,* and *Antiaris toxicaria* recording the highest values. The findings in this study, represents the current status of tree stands in the Legon Botanical Garden.

Keywords: Urban trees, Legon botanical garden, Tree diversity, Biomass and carbon storage