ESTIMATION OF CARBON STORAGE AND TREE DIVERSITY AT DIFFERENT GREENERY AREAS OF DHAKA CITY

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Executive summary

Several studies conducted regarding carbon storage (CS) in different forest types, woody and non-woody vegetation worldwide. However, studies regarding CS in the urban forest and its relation to plant floristic characteristics and vegetation types are less common. To estimate to effect of carbon storage and tree diversity at different greenery areas of dhaka city, a study was conducted during the year of 2017-18. The allometric equation was used to estimate above-ground biomass and CS was measured as 50% of the tree biomass. The Shannon–Wiener index was used for evaluating the tree diversity. Total above-ground CS of the four sampling sites (urban park, playground edge plantation, botanical garden and roadside plantation) was 106.46, 90.94, 387.01 and 223.27 Mg ha^{-1}, respectively. The trees in botanical gardens were found to have the highest total basal area (22.18 m^2 ha^{-1}) and playground edge plantation (12.37 m^2 ha^{-1}) had the lowest. Urban parks showed the highest mean dbh value (11.30 cm), while the lowest was observed in the playground edge plantation (7.09 cm). The maximum diversity was observed in the botanical garden (1.98 ± 0.05), while playground edge plantation (1.45 ± 0.18) was the least diverse. The vegetation areas composed of higher number of large woody trees, such as a botanical garden or a roadside plantation, contribute higher amounts of CS. The mean tree density and dbh value were highest in the urban park, while the basal area and diversity values were highest in the botanical garden. Except playground sites (p = .08), dbh and basal area showed significant positive effects on CS.

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