

ESTIMATION OF CARBON STOCK OF EXISTING TEAK (*Tectona grandis*) PLANTATIONS IN ANURADHAPURA AND KURUNEGALA DISTRICTS

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Carbon management in forest plantations will probably be the most important agenda of the first half of the 21st century in mitigating global climatic changes. Hence, a pilot study was carried out to estimate the Carbon stocks of Teak (*Tectona grandis*) plantations in Anuradhapura and Kurunegala Districts representing the dry and intermediate zones of Sri Lanka, Teak being the widely planted plantation forest species that exist in the area. Estimates of above ground biomass (AGB) and C stocks of the diverse age classes of Teak plantations were done using the forest inventory data received from the Department of Forestry in Sri Lanka. Total AGB and C stocks of each district was calculated using relevant allometric equations and diameter values at breast height, extracted from the FORDATA database. Per hectare C stock of Teak was greater in Kurunegala than in Anuradhapura, in almost all age classes. The total extent of Teak plantations above age of 05 years in Anuradhapura and Kurunegala Districts were 3312.2 and 3499.8 hectares, respectively in year 2012. The total AGB and the Carbon stock of existing Teak plantations in the Anuradhapura District is 3.64×10^5 and 1.82×10^5 tonnes, respectively whereas, it was 4.04×10^5 and 2.02×10^5 tonnes in the Kurunegala District. The average per hectare Carbon stock is 54.94 and 57.72 tonnes in Anuradhapura and Kurunegala Districts, respectively.

Key words: Above ground biomass, Age classes, Carbon stocks, *Tectona grandis*