



Assessment of Aboveground Biomass and Carbon Storage in Bamboo Species in Sub-Tropical Bamboo Forests of Mizoram, North-East India

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Abstract: Bamboo forests cover about 57% of the total forest area in Mizoram and most dominant bamboo species include *Melocanna baccifera*, *Dendrocalamus longispathus*, *Dendrocalamus hamiltonii*. The present study aims to determine aboveground biomass and carbon storage in five bamboo species viz. *M. baccifera*, *D. longispathus*, *D. hamiltonii*, *Bambusa tulda* and *Schizostachyum dullooa* in Mamit district, Mizoram. A total of 33 sample plots were laid and aboveground biomass was studied using harvesting method. Diameter of bamboo was divided into three diameter classes as <3 cm, 3-5 cm and >5 cm. The culm density was highest in 3-5 cm diameter class. Total aboveground biomass in five bamboo species was *D. longispathus* (214 Mg ha⁻¹) > *M. baccifera* (169 Mg ha⁻¹) > *B. tulda* (111 Mg ha⁻¹) > *D. hamiltonii* (101 Mg ha⁻¹) > *S. dullooa* (41 Mg ha⁻¹). Aboveground biomass in <3 cm diameter class was highest in *D. longispathus* (23.82 Mg ha⁻¹) and lowest in *S. dullooa* (8.28 Mg ha⁻¹) whereas aboveground biomass in 3-5cm and <5cm ranged from 14.15 – 81.23 Mg ha⁻¹ and 17.84 – 109.88 Mg ha⁻¹ respectively. Carbon storage in >3 cm was (4-12 Mg ha⁻¹), 3-5 cm (7-41 Mg ha⁻¹) and > 5 cm (9-54 Mg ha⁻¹). This study demonstrates that bamboo has potential in enhancing carbon stock and important contribution in carbon stabilization to mitigate climate change impact efficiently.

Keywords: Bamboo, Biomass, Carbon, Climate change, Sub-tropical forest
