



**Estimation of Carbon Stock of Red Meranti
(*Shorea leprosula* Miq.) Stands at Natural Forests Applying
Intensive Silviculture in Indonesia**

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Abstract: One of the forest functions in protecting climate changes was through a carbon sink; vegetation in the forest absorbs carbon dioxide gas through photosynthesis process and keeps the gas in a biomass form. Carbon stock in the red meranti (*Shorea leprosula* Miq.) stands and the capacity of the species to absorb carbon dioxide (CO₂) gas was not sufficiently studied. The objectives of the research were to analyze the amount of (1) carbon stock in the red meranti stands at different ages, (2) carbon dioxide gas absorbed by the red meranti stands, (3) the economic value of the carbon stock in the red meranti stands. The results showed that total carbon stock in the red meranti stands increased with age. Total carbon stock in the red meranti stands with the age of 6, 8, and 10 years was 7.63 tons/ha, 47.10 tons/ha, and 74.89 tons/ha respectively. The average increase of carbon stock in the red meranti was 16.82 tons/ha per year. Red meranti stands with the age of 6, 8, and 10 years could be expected to absorb carbon dioxide gas as amount of 28.01 tons/ha, 172.83 tons/ha, and 274.86 tons/ha respectively. At a price of US\$6, carbon stock in the red meranti stands with the age of 6, 8, and 10 years was worth US\$168.04/ha, US\$1,037.14/ha, and US\$1,649.17/ha respectively.

Key words : Red meranti stand, carbon stock, CO₂ absorption.