

**INOVASI METODOLOGI DAN METODE ESTIMASI CADANGAN
KARBON DALAM HUTAN DALAM RANGKA *REDUCED EMISSIONS
FROM DEFORESTATION AND DEGRADATION (REDD) INDONESIA***

(Inovation on Methodology and Methods of Forest Carbon Stock Estimation
in Line with the Indonesian Programme on Reduced Emissions from
Deforestation and Degradation (REDD))

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ABSTRAK

Tujuan penelitian ini adalah menciptakan suatu metodologi dan metode yang tepat guna untuk mengestimasi cadangan karbon di dalam berbagai tipe hutan di Indonesia. Penelitian tahun pertama difokuskan pada rekayasa dan aplikasi metodologi dan metode untuk mengestimasi cadangan karbon hutan rakyat jeunjing (*Paraserianthes falcataria L Nielsen*) di Desa Julagajaya, Kecamatan Jasinga, Kabupaten Bogor, Jawa Barat. Metodologi dan metode estimasi cadangan karbon ini berdasarkan survei potensi karbon hutan dan model persamaan massa karbon pohon. Hasil studi menunjukkan terdapat perbedaan kadar karbon dalam biomassa dari bagian-bagian pohon. Model persamaan massa karbon pohon jeunjing adalah $C = 0,7 D^{1,48}$, dengan R^2 adj. = 95,7 %. Hasil estimasi massa karbon pohon jeunjing berdasarkan model persamaan penelitian ini lebih rendah dibandingkan dengan hasil estimasi berdasarkan model Brown (1997), tetapi lebih tinggi bila dibandingkan hasil estimasi berdasarkan model Ketterings et al. (2001). Berdasarkan model penelitian ini potensi karbon hutan rakyat jeunjing di Desa Julagajaya berturut-turut adalah 29,262; 33,555; 36,041; 39,163; 33,163; dan 56,943 ton/ha untuk tegakan berumur 1,2,3,4,5 dan 6 tahun. Implementasi metodologi dan metode tersebut terhadap hutan rakyat jeunjing menunjukkan tingkat aplikasinya yang baik dalam mengestimasi massa karbon di hutan.

Kata kunci : Metodologi, metode, model, karbon, hutan.

ABSTRACT

The objective of this study is to create an appropriate methodology and methods of forest carbon stock estimation for various forest types in Indonesia. In the first year, the study was focused on the engineering and application of the methodology and methods for carbon stock estimation in the community forest of falcata (*Paraserianthes falcataria L Nielsen*) of Julagajaya Village, Jasinga Subdistrict, Bogor District, West Java, Indonesia. The methodology and methods were based on field surveys of the forest and an equation model of tree biomass carbon. It was found that carbon content within different parts of tree biomass was different, and model equation of tree carbon mass estimation for falcata was $C = 0.7 D^{1.48}$, with R^2 adj. = 95.7. Carbon mass of falcata estimated by the use of current equation model was found lower than that of Brown's (1997). However it was higher than that of Ketterings et al. (2001). Based on current equation model, carbon stocks of the falcata in the community forest of Julagajaya village were estimated as high as 29.262 ton/ha, 33.555 ton/ha, 36.041 ton/ha, 39.163 ton/ha, 33.163 ton/ha, and 56.943 ton/ha, respectively for the 1,2,3,4,5 and 6 year old stands. The implementation of the methodology and methods to the community forest of falcata has demonstrated its applicability to assess the forest carbon mass stock in the forest.

Keywords: Methodology, method, model, carbon, forest.