ESTIMASI PRODUKSI BIOMASSA DAN VALUASI NILAI EKONOMI KARBON PADA TEGAKAN FLAMBOYAN (*Delonix regia*) DI KAWASAN HUTAN WANAGAMA

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INTISARI

Hutan memiliki kemampuan untuk menyerap emisi gas rumah kaca yang ada, terutama gas karbondioksida (CO_2) yang dimanfaatkan untuk fotosintesis. Penelitian ini bertujuan untuk mengetahui potensi biomassa, simpanan karbon, dan serapan gas CO_2 serta nilai ekonomi karbon yang dapat dihasilkan dari tegakan flamboyan (*Delonix regia*) yang tumbuh di kawasan hutan Wanagama, Gunungkidul, Daerah Istimewa Yogyakarta. Potensi biomassa, simpanan karbon, dan serapan CO_2 ini meliputi potensi pada berbagai tingkat pertumbuhan pohon flamboyan.

Estimasi biomassa tegakan dilakukan secara *non destructive sampling* menggunakan plot ukur lingkaran dengan luas 400 m^2 (r = 11,29 m). Simpanan karbon tegakan diasumsikan sebesar 47% dari biomassa total dan serapan CO_2 dihitung dengan mengkonversi masa atom molekul CO_2 dari atom C menggunakan konstanta 3,67. Hasil penelitian ini menunjukkan bahwa potensi biomassa, simpanan karbon, dan serapan CO_2 total dari tegakan tegakan flamboyan masing-masing adalah 509,765 ton/Ha; 239,590 ton/Ha; dan 879,294 ton/Ha. Selain itu, hasil potensi serapan CO_2 total dari tegakan flamboyan yang dapat diperjualbelikan dalam mekanisme perdagangan karbon memiliki nilai ekonomi sebesar USD 2.953,88/Ha atau Rp 42.816.807,00/Ha yang diperoleh berdasarkan metode *Benefit transfer*.

Kata kunci : *Delonix regia*, biomassa, simpanan karbon, serapan CO_2, nilai ekonomi

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ESTIMATION OF BIOMASS PRODUCTION AND CARBON ECONOMIC VALUATION OF FLAMBOYAN (*Delonix regia*) STANDS IN THE WANAGAMA FOREST AREA

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ABSTRACT

Forest has the ability to absorb greenhouse gas emissions, particularly carbon dioxide (CO_2) that is used for photosynthesis. This research have purposes to find out estimated potential of biomass, carbon storage, and the uptake of CO_2 as well as the economic value of carbon that can be produced from the flamboyant (Delonix regia) stands in Wanagama forest area, Gunungkidul, Special Region of Yogyakarta . The potency of biomass, carbon storage, and the uptake of CO_2 includes potential at various stages of growth flame trees.

To estimate the biomass of stand conducted non-destructive sampling method used a circle measuring plot with an area of 400 m^2 (r = 11, 29 m). Carbon storage of stands assumed at 47% of the total biomass and uptake of CO_2 is calculated by converting molecules of CO_2 from the atom C using the constant number 3,67. These results of research indicate that the total potency of biomass, carbon storage, and the uptake of CO_2 of flamboyant stands amounted to 509,765 ton/ Ha; 239,590 ton/Ha; and 879,294 ton/Ha. In addition, the results of the potential uptake of CO_2 total of Delonix regia stands which merchantability in the carbon trade mechanism has economic value of USD 2.953,88 /Ha or Rp 42.816.807,00 /Ha that obtained by Benefit transfer methods.

Keywords : Delonix regia, biomass, carbon stock, CO_2 absorption, economic value

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