SIMPANAN DAN NILAI EKONOMI KARBON JENIS JATI KONVENSIONAL DAN JATI UNGGUL MEGA DI KHDTK WANAGAMA, GUNUNGKIDUL, DAERAH ISTIMEWA YOGYAKARTA

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INTISARI

Pemanasan global merupakan salah satu isu yang masih menjadi perhatian banyak pihak di seluruh dunia. Terjadinya pemanasan global telah berdampak pada kehidupan sehari-hari, seperti kenaikan permukaan air laut, cuaca ekstrim, perubahan pola presipitasi, dan mulai berjangkitnya berbagai penyakit. Hutan sebagai salah satu *carbon sink* memiliki kemampuan dalam menyerap gas rumah kaca di atmosfer, yakni karbondioksida. Penelitian ini dikhususkan pada jenis jati konvensional dan jati unggul mega yang banyak diminati sebagai kayu pertukangan merupakan salah satu penyusun vegetasi di kawasan hutan Wanagama. Tujuan penelitian ini adalah mengetahui besar potensi simpanan dan nilai ekonomi karbon pada tegakan jati konvensional dan jati mega di KHDTK Wanagama, Gunungkidul, Daerah Istimewa Yogyakarta.

Penelitian dilaksanakan dengan metode *non-destructive* sampling menggunakan plot ukur berbentuk bujur sangkar dengan luas 400 m^2 (20 m x 20m). Simpanan karbon tegakan diasumsikan sebesar 47% dari biomassa total, sedangkan serapan CO_2 dihitung dengan mengkonversi simpanan karbon dengan konstanta 3,67 yang merupakan rasio masa atom molekul CO_2 dari atom C. Hasil penelitian yang didapat menunjukkan bahwa potensi biomassa, simpanan karbon dan serapan CO_2 dari tegakan jati konvensional umur 14 tahun masing-masing sebesar 76,034 ton/ha, 35,74 ton/ha, dan 131,15 ton/ha. Kemudian, untuk tegakan jati mega umur 18 tahun masing-masing memiliki potensi biomassa, simpanan karbon, dan serapan CO_2 sebesar 121,555 ton/ha, 57,13 ton/ha, dan 209,67 ton/ha. Selain itu, potensi serapan CO_2 yang dapat diperjualbelikan dalam mekanisme perdagangan karbon untuk jati konvensional dan jati mega masing-masing senilai Rp9.827.106,02/ha dan Rp15.710.565,14/ha berdasarkan metode *benefit transfer*.

Kata kunci: Jati konvensional, jati mega, biomassa, simpanan karbon, serapan CO_2, nilai ekonomi

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STORAGE AND ECONOMIC VALUE OF CARBON IN CONVENTIONAL AND SUPERIOR TEAK IN WANAGAMA EDUCATIONAL FOREST, GUNUNGKIDUL, SPECIAL REGION OF YOGYAKARTA

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ABSTRACT

Global warming is one of the issues that still concerns many people around the world. The occurrence of global warming has had many impacts on daily life, such as rising sea levels, extreme weather, changes in precipitation patterns, and the outbreak of various diseases. Forests as a carbon sink have ability to absorb greenhouse gases in the atmosphere, especially carbon dioxide. This research is devoted to conventional and superior teak which are in great demand as carpentry wood and are one of the constituents of vegetation in the Wanagama educational forest area. The purpose of this study is to determine the potential storage and economic value of carbon in conventional and "mega" superior teak stands in Wanagama educational forest, Gunungkidul, Special Region of Yogyakarta.

To estimate the biomass of stand conducted non-destructive sampling method using a square measuring plot with an area of 400 m^2 (20 m x 20m). Carbon storage of stand assumed to be 47% of the total biomass, while CO_2 uptake was calculated by converting carbon storage with a constant of 3.67 which is the ratio of the atomic mass of CO_2 molecules from C atoms. The results obtained showed that the potential biomass, carbon storage, and CO_2 uptake of conventional teak stands aged 14 years were 76.034 tonnes/ha, 35.74 tonnes/ha, and 131.15 tonnes/ha, respectively. Then, for mega teak stands aged 18 years, the potential biomass, carbon storage, and CO_2 uptake were 121,555 tonnes/ha, 57,13 tonnes/ha, and 209,67 tonnes/ha, respectively. In addition, the potential CO_2 uptake that can be traded in the carbon trading mechanism for conventional teak and mega teak is worth Rp9,827,106.02/ha and Rp15,710,565.14/ha respectively based on the benefit transfer method.

Keywords: Conventional teak, mega superior teak, carbon stock, CO_2 absorption, economic value

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