

KONTRIBUSI RUANG TERBUKA HIJAU KAWASAN CANDI  
PRAMBANAN DALAM MENYERAP EMISI GAS KARBON DIOKSIDA  
DARI SEKTOR PARIWISATA

INTISARI

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INTISARI

Kawasan Candi Prambanan merupakan salah satu destinasi wisata utama yang memiliki intensitas aktivitas manusia cukup tinggi, sehingga berpotensi menjadi sumber emisi karbon dioksida (CO<sub>2</sub>). Penelitian ini bertujuan untuk mengidentifikasi Ruang Terbuka Hijau, menghitung potensi biomassa, simpanan karbon, serta serapan CO<sub>2</sub>, dan menganalisis kontribusi Ruang Terbuka Hijau terkait serapan CO<sub>2</sub>. Metode yang digunakan mencakup inventarisasi vegetasi, pengukuran parameter tegakan, analisis emisi dari berbagai sumber (kendaraan pengunjung, konsumsi listrik, bahan bakar memasak, pembakaran sampah), serta analisis neraca karbon dengan membandingkan emisi dan serapan CO<sub>2</sub>.

Hasil penelitian menunjukkan bahwa Ruang Terbuka Hijau (RTH) memiliki total luas 53,13 ha dan didominasi oleh jenis pohon angkana (*Pterocarpus indicus*), glodokan (*Polyalthia longifolia*), dan tanjung (*Mimusops elengi*). Potensi biomassa RTH sebesar 61,77 ton/tahun dengan simpanan karbon 29 ton/tahun dan serapan CO<sub>2</sub> sebesar 106,34 ton/tahun. Emisi tahunan CO<sub>2</sub> dari aktivitas wisata tercatat sebesar 714,2 ton/tahun, sedangkan emisi dari kendaraan umum di jalan raya sekitar kawasan mencapai 7.485,86 ton/tahun. Berdasarkan neraca karbon, kawasan Candi Prambanan memiliki neraca negatif akibat tidak mampu menyerap emisi sebesar 714,2 ton/tahun dari aktivitas didalam Kawasan.

Kata Kunci: Ruang Terbuka Hijau, emisi Karbon dioksida, Biomassa, Serapan Karbon, Candi Prambanan

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Contribution of Green Open Spaces in the Prambanan Temple Complex to the Sequestration of Carbon Dioxide Emissions from the Tourism Sector  
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ABSTRACT

*The Prambanan Temple area is one of the main tourist destinations with high levels of human activity, making it a potential source of carbon dioxide (CO<sub>2</sub>) emissions. This study aims to identify Green open Spaces types, estimate biomass potential, carbon stock, and CO<sub>2</sub> sequestration, as well as analyze the contribution of Green Open Spaces to CO<sub>2</sub> absorption. The methods used include vegetation inventory, measurement of stand parameters, emission analysis from various sources (visitor vehicles, electricity consumption, cooking fuel, and open waste burning), and carbon balance analysis by comparing CO<sub>2</sub> emissions and sequestration.*

*The research results show that the Green Open Space (GOS) covers a total area of 53.13 hectares and is dominated by *angsana* (*Pterocarpus indicus*), *glodokan* (*Polyalthia longifolia*), and *tanjung* (*Mimusops elengi*) tree species. The biomass potential of the GOS is 61.77 tons per year, with carbon storage of 29 tons per year and CO<sub>2</sub> absorption of 106.34 tons per year. Annual CO<sub>2</sub> emissions from tourism activities are recorded at 714.2 tons per year, while emissions from public vehicles on the surrounding roads reach 7,485.86 tons per year. Based on the carbon balance, the Prambanan Temple Complex shows a negative balance due to its inability to absorb 714.2 tons of CO<sub>2</sub> per year from activities within the area.*

*Keywords: Green Open Space, carbon dioxide emissions, biomass, carbon sequestration, Prambanan Temple*

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