

## Abstrak

### JENIS-JENIS VEGETASI PENYUSUN JALUR HIJAU SUMBU FILOSOFI YOGYAKARTA SEBAGAI PENYERAP POLUTAN CO<sub>2</sub> DAN Pb

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Predikat Kota Yogyakarta sebagai kota pendidikan, budaya, dan tujuan wisata terus berkembang. Konsekuensinya jumlah penduduk semakin meningkat dan diimbangi dengan kepadatan lalu lintas. Kota Yogyakarta sedang menata ulang rth (Ruang Terbuka Hijau) di kawasan Sumbu Filosofi sesuai dengan sejarah kawasan tersebut dan mengajukannya ke UNESCO sebagai salah satu kota filosofi dunia. Vegetasi pada RTH tersebut kurang diketahui serapannya terhadap CO<sub>2</sub> dan Pb karena imbas dari kepadatan lalu lintas. Penelitian ini bertujuan untuk: (1) Memetakan jenis-jenis vegetasi pada jalur hijau di Sumbu Filosofi; (2) Menaksir serapan polutan gas CO<sub>2</sub> dan Pb dari jenis-jenis pohon; (3) Merumuskan strategi keberlanjutan Sumbu Filosofi.

Teknik pengumpulan data meliputi observasi, inventarisasi, analisis sampel, wawancara, dan studi literatur. Hasil penelitian meliputi: (1) pemetaan dan inventarisasi vegetasi di Sumbu Filosofi sebagai berikut *Mimusops elengi* 106 pohon, *Manilkara kauki* 37 pohon, *Tamarindus indica* 245 pohon, *Ficus benjamina* 17 pohon, dan *Inocarpus fagifer* 24 pohon. (2) hasil penaksiran serapan polutan CO<sub>2</sub> dan Pb dengan berdasarkan waktu pengambilan sampel daun didapat nilai tertinggi pada waktu 18:00 untuk CO<sub>2</sub> 19,24  $\mu\text{mol}/\text{m}^2/\text{detik}$  dan Pb 1,525 ppm. Berdasarkan zonasi didapat nilai tertinggi pada zonasi depan dengan nilai untuk CO<sub>2</sub> 55,64  $\mu\text{mol}/\text{m}^2/\text{detik}$  dan Pb 8,2 ppm. (3) perumusan strategi keberlanjutan Sumbu Filosofi berdasarkan hasil analisis SWOT adalah mengacu pada kuadran 1. Alternatif strategi yang disarankan diantaranya: izin pendirian dan pemakaian bangunan di Sumbu Filosofi harus dipertegas lagi oleh Dinas Penanaman Modal dan Perizinan; menanamkan kesadaran menjaga cagar budaya bekerjasama dengan Balai Pelestarian Cagar Budaya; bersama dengan komunitas lingkungan untuk membantu membersihkan sampah dan penyuluhan kepada masyarakat dan wisatawan; bekerjasama dengan Dinas Kominfo untuk mempromosikan Sumbu Filosofi melalui media sosial; keterlibatan masyarakat untuk ikut mengelola Sumbu Filosofi dijembatani oleh LMPK; diperlukan peringatan maupun rambu yang jelas dan tegas dikawasan agar wisatawan dan masyarakat mengetahui bahwa terdapat ancaman hukuman apabila tidak mematuhi peraturan.

Kata Kunci: RTH, SWOT, kota filosofi, UNESCO, tanaman khas

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## Abstract

### TYPES OF VEGETATION COMPARING THE GREEN LINE PHILOSOPHY AXIS OF YOGYAKARTA AS ABSORBERS OF CO<sub>2</sub> AND Pb POLLUTANTS

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The predicate of the City of Yogyakarta as a city of education, culture, and tourist destinations continues to grow. Consequently the population is increasing and balanced by traffic density. The city of Yogyakarta is rearranging the RTH (Green Open Space) in the Philosophical Axis area in accordance with the history of the region and submit it to UNESCO as one of the world's philosophical cities. Vegetation on the green space is less known its absorption of CO<sub>2</sub> and Pb due to the impact of traffic density. This study aims to: (1) Map the types of vegetation on the green belt in the Philosophical Axis; (2) Estimating uptake of CO<sub>2</sub> and Pb gas pollutants from tree species; (3) Formulating a strategy for the sustainability of the Philosophy Axis.

Data collection techniques include observation, inventory, sample analysis, interviews, and literature studies. The results of the study include: (1) mapping and inventory of vegetation in the Philosophical Axis as follows: *Mimusops elengi* 106 trees, *Manilkara kauki* 37 trees, *Tamarindus indica* 245 trees, *Ficus benjamina* 17 trees, and *Inocarpus fagifer* 24 trees. (2) the results of CO<sub>2</sub> and Pb pollutant uptake estimation based on leaf sampling time obtained the highest value at 18:00 for CO<sub>2</sub> 19.24 µmol/m<sup>2</sup>/sec and Pb 1,525 ppm. Based on zoning obtained the highest value on the front zoning with a value for CO<sub>2</sub> 55.64 µmol/m<sup>2</sup>/sec and Pb 8.2 ppm. (3) the formulation of the strategy of the Philosophical Axis sustainability based on the results of the SWOT analysis is referring to quadrant 1. Alternative strategies suggested include: permit for the construction and use of buildings in the Philosophical Axis must be confirmed again by the Office of Investment and Licensing; instill awareness in maintaining cultural heritage in collaboration with the Center for Preservation of Cultural Heritage; together with the environmental community to help clean up rubbish and counseling to the public and tourists; collaborating with the Office of Communication and Information to promote the philosophy of philosophy through social media; community involvement to participate in managing the Axis Philosophy is bridged by LMPK; clear and explicit warnings and signs are needed in the area so that tourists and the public know that there is a threat of punishment if they do not comply with the rules.

Keywords: Green Open Space, SWOT, Philosophy City, UNESCO, typical plants

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