

## **Potensi Simpanan Karbon Dan Serapan Gas CO<sub>2</sub> Hutan Rakyat Desa Karangrejo Purworejo Jawa Tengah**

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### **INTISARI**

Perubahan iklim (climate change) yang ditandai dengan naiknya suhu rata-rata di permukaan bumi. Penambahan suhu rata rata disebabkan oleh adanya peningkatan konsentrasi gas karbon dioksida (CO<sub>2</sub>). Pengurangan CO<sub>2</sub> dapat dilakukan dengan aksi mitigasi berupa pembangunan hutan rakyat.

Penelitian ini bertujuan untuk memetakan batas kelola hutan rakyat di Desa Karangrejo, mengetahui tingkat kepadatan vegetasi hutan rakyat di Desa Karangrejo menggunakan *Normalized Difference Vegetation Index* (NDVI), menghitung potensi biomassa pohon penyusun hutan rakyat menggunakan persamaan allometrik, mengestimasi potensi karbon dan serapan karbon CO<sub>2</sub> hutan rakyat di Desa Karangrejo. Pengumpulan data dilakukan dengan cara pengukuran langsung di lapangan melalui kegiatan inventarisasi tegakan pohon. Penentuan petak ukur dengan di lapangan menggunakan metode *stratified random sampling* berdasarkan kelas kepadatan vegetasi.

Hasil penelitian ini menunjukkan bahwa luas total hutan rakyat di Desa Karangrejo yakni 171 ha tersebar di tiga dusun yakni Dusun Karangjati (50 ha), Dusun Caok (71 ha) dan Dusun Krajan (50 ha). Kepadatan vegetasi yang dimiliki hutan rakyat yakni kelas kepadatan rendah (22,26 ha), sedang (79,69 ha), tinggi (69,05 ha). Potensi simpanan biomassa sebesar 74,13 ton/ha, karbon 34,84 ton/ha, serta serapan CO<sub>2</sub> sebesar 127,86 ton/ha. Simpanan karbon sebesar 34,84 ton/ha termasuk kategori rendah berdasarkan kriteria yang disarankan oleh Intergovernmental Panel on Climate Changes (IPCC).

Kata kunci: Hutan rakyat, biomassa, NDVI, Kepadatan

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## **Potential of Carbon Stocks and CO<sub>2</sub> Gas Absorption in Private Forest of Karangrejo Village Purworejo Regency**

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### ***ABSTRACT***

Climate change, which is characterized by an increase in average temperature, has several negative impacts on humans, the environment, flora and fauna on the earth's surface. The addition of greenhouse gases, especially carbon dioxide (CO<sub>2</sub>) in the earth's atmosphere, includes the burning of fossil fuels every day. One way to reduce CO<sub>2</sub> can be done by taking action in the form of developing community forests.

This research aims to map the private forest boundaries of Karangrejo Village, determine the level of vegetation density of community forests in Karangrejo Village using the Normalized Difference Vegetation Index (NDVI), calculate the potential biomass of trees that make up community forests using allometric equations, estimate carbon potential and carbon absorb CO<sub>2</sub> in the private forest of Karangrejo Village. Data collection was carried out by direct measurements in the field through tree stand inventory activities. Determination of measuring plots in the field using the stratified random sampling method based on vegetation density classes.

The results of this research show that the total area of private forest in Karangrejo Village is 171 ha spread over three hamlets were Karangjati hamlet (50 ha), Caok Hamlet (71 ha) and Krajan Hamlet (50 ha). The vegetation density of private forests is low dense (22.26 ha), dense (79.69 ha), high dense (69.05 ha). The potential for biomass stocks is 74.13 ton ha<sup>-1</sup>, carbon 34.84 ton ha<sup>-1</sup>, and CO<sub>2</sub> absorb is 127.86 ton ha<sup>-1</sup>. Carbon stocks of 34.84 ton ha<sup>-1</sup> are in the low category based on the criteria recommended by the Intergovernmental Panel on Climate Changes (IPCC).

Key words: private forest, biomass, NDVI, density.

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