

SIMPANAN DAN NILAI EKONOMI KARBON AGROFORESTRI KOPI HUTAN RAKYAT DESA NGAMPELDENTO KABUPATEN MAGELANG PROVINSI JAWA TENGAH

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INTISARI

Pemanasan global telah menyebabkan terjadinya perubahan iklim yang ekstrim. Pembangunan hutan rakyat merupakan salah satu contoh nyata dari mitigasi perubahan iklim. Dalam hal ini hutan rakyat mempunyai peran penting sebagai penyerap karbon dioksida (CO₂) melalui proses fotosintesis. Desa Nampeldento merupakan salah satu desa di Kecamatan Salaman, Kabupaten Magelang yang menerapkan praktik hutan rakyat dengan sistem agroforestri kopi. Informasi terkait potensi hutan rakyat sebagai penyerap karbon belum pernah dilaporkan secara detail. Oleh karena itu, penelitian ini dilakukan dengan tujuan untuk mengetahui potensi biomassa, simpanan karbon, serapan CO₂, dan nilai ekonomi serapan CO₂ pada tegakan penyusun hutan rakyat.

Dalam penelitian ini, pengukuran biomassa dilakukan menggunakan metode *non-destructive sampling*. Selanjutnya, pendugaan biomassa dilakukan dengan persamaan allometrik berdasarkan jenis pohon. Pendugaan simpanan karbon dihitung menggunakan asumsi bahwa 47% biomassa pohon tersusun dari karbon dan untuk serapan CO₂ diperoleh dari konversi dengan konstanta 3,67. Serta taksiran ekonomi serapan CO₂ dilakukan menggunakan metode *benefit transfer* dengan mengalikan nilai serapan CO₂ dengan harga jual karbon.

Hasil penelitian ini menunjukkan bahwa potensi biomassa, simpanan karbon, dan serapan serapan CO₂ untuk agroforestri kopi di hutan rakyat Desa Nampeldento, Kecamatan Salaman, Kabupaten Magelang berturut-turut sebesar 1.002,77 ton/ha; 471,3 ton/ha; 1.729,68 ton/ha. Nilai ekonomi serapan CO₂ agroforestri kopi hutan rakyat Desa Nampeldento dengan luasan 20 ha sebesar 69.332,92 USD atau setara dengan Rp 1.072.833.319,39. Dengan besaran nilai ekonomi tersebut kiranya perlu dipertimbangkan bahwa agroforestri kopi hutan rakyat Desa Nampeldento berpotensi diajukan dalam skema perdagangan karbon dunia.

Kata kunci: Agroforestri kopi hutan rakyat, Biomassa, Simpanan Karbon, Serapan CO₂, Nilai Ekonomi

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STORAGE AND ECONOMIC VALUE OF CARBON AGROFORESTRY COFFEE COMMUNITY FOREST NGAMPELDENTO VILLAGE, MAGELANG REGENCY, CENTRAL JAVA PROVINCE

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ABSTRACT

Global warming has caused extreme climate change. Community forest development is one clear example of climate change mitigation. In this case, community forests have an important role as carbon dioxide (CO₂) absorbers through the process of photosynthesis. Nampeldento Village is one of the villages in Salaman District, Magelang Regency that implements community forest practices with a coffee agroforestry system. Information on the potential of hutan rakyat as a carbon sink has never been reported in detail. Therefore, this research was conducted with the aim of determining the potential of biomass, carbon storage, CO₂ sequestration, and the economic value of CO₂ absorption in stands that made up community forests.

In this research, biomass measurements were carried out using non-destructive sampling methods. Furthermore, estimation of biomass was carried out with allometric equations based on tree species. The estimation of carbon storage was calculated using the assumption that 47% of tree biomass was composed of carbon and for CO₂ uptake obtained from conversion with a constant of 3.67. The economic estimation of CO₂ absorption was carried out using the benefit transfer method by multiplying the value of CO₂ absorption by the selling price of carbon.

The results of this research showed that the potential of biomass, carbon storage, and CO₂ absorption for coffee agroforestry in the community forest of Nampeldento Village, Salaman District, Magelang Regency was respectively 1.002,77 tons / ha; 471,3 tons/ha; 1.729,68 tons/ha. The economic value of CO₂ absorption of coffee agroforestry in Nampeldento Village with an area of 20 ha was 69.332,92 USD or equivalent to Rp 1.072.833.319,39. With this amount of economic value, it was necessary to consider that the coffee agroforestry of the Nampeldento Village community forest had the opportunity to be proposed in the world carbon trading scheme.

Keywords: Agroforestry community forest coffee, Biomass, Carbon Storage, CO₂ Sequestration, Economic Value

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