

KEANEKARAGAMAN DAN STRUKTUR VEGETASI AGROFORESTRI PEKARANGAN SERTA FUNGSI EKOLOGIS SEBAGAI KOMPLEMEN HUTAN NEGARA DI LERENG GUNUNG LAWU

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INTISARI

Deforestasi dan degradasi hutan terus mengancam keanekaragaman hayati, sehingga diperlukan solusi berbasis ekosistem seperti agroforestri pekarangan. Penelitian ini membandingkan agroforestri pekarangan (AF) dengan hutan alam (Tahura) di lereng Gunung Lawu, Jawa Tengah, melalui analisis vegetasi, tanah, dan aspek sosial. Hasil menunjukkan AF didominasi spesies ekonomis seperti mahoni dan jati dengan keanekaragaman lebih rendah (indeks Shannon 1.23) dibanding Tahura (1.62) yang kaya spesies asli. Meski struktur tegakan (kerapatan dan tutupan tajuk) relatif mirip, Tahura memiliki kandungan bahan organik tanah lebih tinggi (C-organik 4.27% vs 2.39%). Analisis PCA mengungkap trade-off antara konservasi biodiversitas dan produktivitas lahan. Dari aspek sosial, AF berperan penting bagi ekonomi rumah tangga namun rentan terhadap alih fungsi lahan. Penelitian menyimpulkan bahwa meski AF mampu meniru fungsi ekologis hutan alam, diperlukan strategi pengayaan spesies asli dan insentif konservasi untuk keberlanjutannya. Temuan ini mendukung pengembangan kebijakan agroforestri berkelanjutan di kawasan pegunungan.

Kata kunci: Agroforestri pekarangan, hutan alam, keanekaragaman hayati, konservasi, Gunung Lawu.

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**DIVERSITY AND VEGETATION STRUCTURE OF HOMEGARDEN
AGROFORESTRY AND ITS ECOLOGICAL FUNCTION AS A
COMPLEMENT TO STATE FORESTS ON THE SLOPES OF MOUNT
LAWU**

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ABSTRACT

Deforestation and forest degradation continue to threaten biodiversity, necessitating ecosystem-based solutions such as homegarden agroforestry. This study compares homegarden agroforestry (AF) with natural forest (Tahura) on the slopes of Mount Lawu, Central Java, through vegetation, soil, and social analyses. Results show AF is dominated by economic species like mahogany and teak with lower diversity (Shannon index 1.23) compared to Tahura (1.62) which is rich in native species. Although stand structure (density and canopy cover) is relatively similar, Tahura has higher soil organic matter content (4.27% vs 2.39%). PCA analysis reveals a trade-off between biodiversity conservation and land productivity. Socially, AF plays a crucial role in household economies but is vulnerable to land conversion. The study concludes that while AF can mimic ecological functions of natural forests, strategies for native species enrichment and conservation incentives are needed for sustainability. These findings support developing sustainable agroforestry policies in mountainous regions.

Kata kunci: Homegarden agroforestry, natural forest, biodiversity, conservation, Mount Lawu

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