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“Reconcile land system changes  
with planetary health”

## Wild and feral plant use for livelihoods in semi-natural landscape in southern java, Indonesia

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### Abstract

Semi-natural landscapes in tropical regions provide habitat to various wild and feral plant species that grow with little to no human management, contributing to the livelihoods of rural communities. Although these species support income, food, and other livelihood needs, their contribution, as well as spatial and seasonal variation, remains underexplored in research and policy related to rural livelihoods and ecosystem services. This study investigates how wild and feral plants support the livelihoods of low-income households in Southern Java through income, food, fodder, medicinal sources, and cultural services. A structured household survey interview was conducted across 237 households located within the administrative boundaries of Kulon Progo, Bantul and Gunung Kidul.

The survey identified 85 collected plant species by households, including 72 wild and 13 feral. Among them, 28 species were collected for one purpose, while the remaining were multifunctional. Plant collection for food was the most common (41 %), followed by income (22 %) and fodder (17 %). Feral *Carica* spp., *Musa* spp., and *Curcuma* spp. were the most multifunctional species, often used for both food and income. Plant collection was reported throughout the year, with no strong seasonal variation. Most species were collected nearby, less than 30 meters, which indicates that the species are integrated into the landscape and accessible for daily use. Altitude was found not to significantly affect plant use categories (i.e. income, food, etc), however, some species are commonly collected in a specific elevation range. Although no major spatial pattern was observed, certain areas showed locally higher species collection. Plant collection and travel distance to collection sites did not differ across income groups and household groups (family with children or adult-only family), suggesting relatively equitable access across groups.

Our findings highlight the steady and flexible role of wild and feral plants in supporting rural livelihoods. Recognizing the plant species contribution in food systems, conservation, and land use planning can enhance rural low-income community resilience, food security and biodiversity in semi-natural landscapes.

**Keywords:** Feral plant, livelihoods, plant collection, plant species, rural households, semi-natural landscapes, wild plant

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